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Status and Management of Wildlife in Saskatchewan, 1998-99

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The significant contribution of SERM wildlife biologists, field technicians, Conservation Officers, and clerical staff to game management in Saskatchewan is also recognized. They collect many of the biological samples used to determine the age and sex of harvested animals, are instrumental in conducting population surveys, and assist the public by answering inquiries regarding wildlife management. The Regional Wildlife Biologists/Specialists, Regional Wildlife Technicians, and Conservation Officers frequently serve as our "eyes and ears", reporting qualitative information pertinent to wildlife.

Executive Summary

Licences and Revenue

Hunting licence sales in 1998 totaled 199,928 (Table 1), generating $6,186,872 of revenue (Table 2).

Table 1. Hunting licence sales and estimated game harvests, 1996-98.

	Licence Sales[a]				Regulated Harvest[b]			
	1996	1997	1998	% Change from 1997	1996	1997	1998	% Change from 1997
Wildlife Habitat Certificate	65,204	67,431	73,800	9.5	—	—	—	—
Big Game								
White-tailed Deer	60,401	63,279	67,657	6.9	46,750	44,652	49,615	11.1
Moose	10,217	8,617	9,520	10.5	3,369	2,393	3,108	29.9
Mule Deer	8,815	7,275	5,211	-28.3	6,917	5,392	3,554	-34.1
Antelope	2,419	0	0	[c]	1,678	0	0	[c]
Elk	5,902	6,461	6,217	9.0	1,732	1,517	1,740	14.7
Black Bear[d]	3,473	3,679	4,224	14.8	1,939	2,174	2,310	6.3
Barren-ground Caribou[e]	38	66	22	-66.7	44	46	< 50	—
Big Game Total	91,265	89,377	92,851	3.9	62,429	56,174	60,372	7.5
Game Birds								
Saskatchewan Resident	18,064	17,150	19,154	11.7	—	—	—	—
Canadian Resident	1,756	1,689	1,749	3.6	—	—	—	—
Non-resident	5,994	6,886	7,964	15.7	—	—	—	—
Ducks[f]	—	—	—	—	190,133	204,211	205,545	0.7
Geese[f]	—	—	—	—	220,287	219,336	280,011	27.7
Sandhill Crane[f]	—	—	—	—	2,961	4,622	8,636	86.8
Sharp-tailed Grouse	—	—	—	—	33,254	30,140	44,275	46.9
Hungarian Partridge	—	—	—	—	42,289	41,768	51,177	22.5
Ruffed Grouse	—	—	—	—	60,904	57,628	81,143	40.8
Spruce Grouse	—	—	—	—	13,233	11,541	10,618	-8.0
Pheasant	—	—	—	—	13,873	3,557	3,075	-13.6
Ptarmigan	—	—	—	—	n/a	n/a	n/a	—
Game Bird Total	25,814	25,725	28,867	12.2	576,934	557,265	684,480	22.8
Youth Licence	3,961	3,921	4,410	12.5	—	—	—	—
Provincial Licence Sales	186,244	186,454	199,928	7.2	—	—	—	—

[a] Licence sale figures as of March 31, 1999. [b] Includes Canadian and non-residents of Canada harvest statistics. [c] Season closed due to low population level. [d] Harvests corrected to account for higher non-resident hunter success rates. [e] Includes subsistence barren-ground caribou use licences. [f] Harvest estimates based on Canadian Wildlife Service statistics. Harvest estimates based on Canadian Wildlife Service statistics. Harvest does not include Canadian resident; hunter questionnaires returned from Canadian residents did not contain any information on hunting big game activity or harvest..

This represents a 7.2% increase in the number of licences sold (Table 1), and a 7.6% increase in licence revenue (Table 2) when compared to 1997. Big game licences generated the majority of hunting licence revenue (Table 2). White-tailed deer licence revenue constituted the largest portion of big game licence revenue (Table 3).

Table 2. Gross revenue from licence sales, 1996-98.

Licence Type	1996	1997	1998	% Change from 1997
Wildlife Habitat Certificate	$ 625,260	$ 659,695	$ 714,723	8.3
Big Game	3,882,132	4,040,176	4,274,099	5.8
Game Bird	906,398	1,016,513	1,161,858	14.3
Youth Licence	32,461	32,629	36,192	10.9
Provincial Game Licence Revenue	$ 5,446,251	$ 5,749,013	$ 6,186,872	7.6

Table 3. Revenue by big game species, 1998.

Species	Licence Revenue [a]	Proportion (%)
White-tailed Deer	$2,902,815	67.9
Moose	374,759	8.8
Mule Deer	175,389	4.1
Antelope	0	0.0
Elk	218,596	5.1
Black Bear	605,778	14.2
Barren-ground Caribou	473	<1.0
Total	$4,277,810	100.0

a Includes regular and draw licence revenues; does not include youth game, depredation hunt, or duplicate game licences.

A youth game and fur licence package was introduced in 1991 to promote interest in hunting and trapping among young people between the ages of 12 and 15. Young hunters could obtain a game bird licence, a white-tailed deer licence, a south Saskatchewan fur licence and a Wildlife Habitat Certificate at a cost of $20 (total package value = $85). In 1998, sales increased 12.5% from 1997 (Table 1).

Sales of game bird licences and migratory game bird permits in 1998 increased 12.2% over 1997 (Table 1), and was 40.2% below the 30-year (1968-1997) average (Table 4).

Table 4. Saskatchewan game bird licence and migratory game bird permit sales, 1967-98.

Year	Saskatchewan Resident Sales	%	Canadian Resident Sales	%	Non-resident Sales	%	Total Game Bird Licences	Migratory Game Bird Permit Sales
1968	52,430	93	—	—	3,784	7	56,214	43,596
1969	46,709	86	3,410	6	4,204	8	54,323	43,347
1970	48,685	84	4,866	8	4,190	7	57,741	47,722
1971	45,398	81	5,076	9	5,496	10	55,970	49,448
1972	47,217	81	5,605	10	5,140	9	57,962	50,004
1973	50,586	89	2,898	5	3,609	6	57,093	51,307
1974	52,591	87	3,821	6	3,790	6	60,202	51,504
1975	57,275	87	4,312	7	4,048	6	65,635	57,723
1976	62,288	86	4,746	7	5,030	7	72,064	61,669
1977	62,205	88	3,901	6	4,583	6	70,689	60,029
1978	60,901	88	3,827	6	4,645	7	69,373	57,958
1979	59,044	88	3,907	6	4,429	7	67,380	56,174
1980	59,151	88	3,929	6	3,793	6	66,873	54,081
1981	49,034	87	3,813	7	3,801	7	56,648	42,856
1982	50,179	87	3,719	6	4,034	7	57,932	47,236
1983	47,157	88	2,978	6	3,741	7	53,876	45,383
1984	40,102	88	2,125	5	3,277	7	45,504	37,720
1985	38,243	87	2,181	5	3,497	8	43,921	36,445
1986	41,317	88	2,158	5	3,731	8	47,206	37,692
1987	34,292	86	1,978	5	3,786	9	40,056	29,930
1988	31,466	87	1,592	4	3,091	9	36,149	23,258
1989	28,779	86	1,595	5	3,241	10	33,615	22,916
1990	26,954	85	1,648	5	3,284	10	31,879	22,964
1991	24,442	82	1,726	6	3,632	12	29,800	22,414
1992	22,577	80	1,760	6	3,752	13	28,089	20,620
1993	19,454	77	1,643	7	4,119	16	25,216	19,771
1994	20,187	77	1,696	6	4,363	17	26,246	20,254
1995	21,374	76	1,643	6	4,977	18	27,994	20,554
1996	18,064	70	1,756	7	5,994	23	25,814	20,475
1997	17,150	67	1,689	7	6,886	27	25,725	20,109
1968-97 Avg	41,175	85	2,867	6	4,199	9	48,240	39,172
1998	19,154	66	1,749	6	7,964	28	28,867	21,822
% Change:								
1998 from 1997	6.0		-0.4		32.9		11.8	8.5
1998 from 1968-97 Avg	-53.5		-39.0		89.7		-40.2	-44.3

Big Game

White-tailed Deer

White-tailed deer populations in the **Grassland** ecozone (WMZ 1-14) appear stable but are below the highs of the 1980s. **Farmland** populations (WMZ15-30) are limited by a shortage of quality winter habitat, particularly in the western zones, but have increased in the eastern zones. Deer densities in the southeast **Parkland** zones (WMZs 31-36) continue to recover from the severe winters of 1995/96 and 1996/97. Populations in the northern parkland zones (WMZs 37-47) have increased. **Forest Fringe** (WMZs 48-55) and **Forest** (WMZs 56-73) populations have increased in response to the last several mild winters.

White-tailed deer licences increased 7%, from 63,279 in 1997 to 67,638 in 1998 (Table 1). Canadian resident and non-resident licence sales increased 14%, from 5,017 in 1997 to 5,723 in 1998. Resident either-sex licence sales increased by 13% from 36,371 in 1997 to 41,229 in 1998. Resident non-trophy licence sales declined 5.5%, from 21,891 in 1997 to 20,686 in 1998. Regulated harvest increased 11% from 44,643 deer in 1997 to 49,615 in 1998. Success rate of resident hunters increased from 74% to 81% but the number of days spent afield increased 2%, from 305,399 hunter-days in 1997 to 310,539 hunter-days in 1998.

Moose

Meadow Lake Provincial Park was the only area surveyed for moose in 1998/99. The survey revealed a density of 0.29 moose/km² which is within the normal range for boreal forest habitat (generally <0.5 moose/km²). An comprehensive assessment of moose populations is currently being undertaken.

The 1998 harvest of 3,108 moose by resident hunters was 10% below the 1977-1997 average harvest of 3,460 moose but 30% larger than the 1997 harvest of 2,393 moose. This increase in harvest compared to last year, can be attributed to better hunting conditions and an 8% increase in the number of hunters. Hunter success during the draw season and regular bull-calf seasons was 47% and 26%, respectively.

No major changes to the 1999 moose allocation strategy are anticipated until the comprehensive assessment of moose population status is complete.

Mule Deer

Total mule deer licence sales in 1998 (5,211) declined 38.2% compared to 1997 (7,276). Draw either-sex licence sales declined by about 33% in 1998 (3,852) compared to 1997 (5719), while draw non-trophy (antlerless) mule deer licence sales were about 65% less in 1998 (252) compared to 1997 (711).Quota restrictions resulted in a 34% smaller harvest in 1998 (3,554 deer) compared to 1997 (5,392 deer). The

number of days spend a field decreased by 21% from 24,994 hunter-days in 1997 to 19,793 hunter-days in 1998.

The overall population management objective during the early 1990s was to reduce the mule deer populations to levels tolerable to landowners. Non-trophy seasons were used to lower the reproductive potential of the population (number of does) , and harvest the young (which are highly predisposed to natural mortality). This harvest strategy resulted in significant declines in mule deer populations throughout the grassland and farmland ecoregions. At present, buck numbers appear to be able to sustain the current harvest pressure although declines were expected and have occurred. The large doe harvests in the early 1990s have impacted on the number of replacement bucks recruited into the adult population. In addition, the 1996/97 and 1997/98 winters were harsh enough to negatively impact the population.

The 1998 management strategy is to continue monitoring population density and structure as resources permit, continue with reduce the either-sex licence allocation in order not to over-harvest the buck segment of the herd, and in response to the harsh winters of 1996/97 and 1997/98. Non-trophy quotas will continue to be limited throughout most of the Grassland and Farmland ecozones to protect the female segment of the population and allow the population structure to return to more natural ratios.

Elk

Elk populations appear to be stable in most and increasing in some areas of Saskatchewan elk range, with the provincial post-hunt population estimated to be 12,750 elk. Survey effort for this species has been minimal over the past couple of years because of the efforts put into assessing moose populations. Surveys are required to refine current winter population status for elk in all portions of it's range.

In 1998, licence sales were 6,188, of which 4,878 were regular licences and 1,310 were draw licences. The provincial harvest of elk totaled 1,740. The regular and draw season elk harvest was 1,111 and 629, respectively. A total of 33,428 hunter recreation-days were generated during the elk seasons.

The hunter success rate during the regular season increased 1998 (23%) compared to 1997 (20%), as did that of the draw season (48% in 1998 compared to 39% in 1997).

Pronghorn Antelope

The long-term provincial post harvest population objective is 17,400. The 1997 pre-harvest population was estimated at 10,000 resulting in a decision to eliminate the hunting season until population levels recover. The low populations are a result of low production and recruitment of kids. No population density surveys were conducted in 1998. Population structure surveys conducted in 1998 indicated an increase in the Kid:Mature Doe ratio from 0.29:1.00 (1997) to 0.34:1.00 (1998) but is still significantly lower that the 0.60-0.70:1.00 ratios of the 1980s. The Mature Bucks:Doe ratio significantly increased from 0.21:1.00 (1997) to 0.32:1.00 (1998).

Black Bear

The black bear population is indices continue to suggest a stable to slightly declining black bear population of 24,000-40,000 bears. The increased ratio of black:off color and decline in adult sex ratio (boars/sow in the harvest) suggest a population decline. The low proportion of cubs in the harvest, similarity of harvest success and harvest effort to previous years and mature reproductive (sow mean age = 6.47 years old) component in the harvest data all suggest the population is stable.

Resident licence sales in 1998 (2,262 licences) were up 24.2% over 1997 (1,821 licences). Canadian and non-resident sales increased 5.6% in 1998 (1,962 licences) relative to 1997 (1,858 licences). Overall bear harvest in 1998 (2,310 bears) was up 6.3% relative to 1997 (2,174 bears). Hunter success for resident hunters averaged 40% whereas non-resident success rate was 77%, which is consistent with 1997 rates of 40% and 75%, respectively.

There were no significant changes proposed for bear management for 1999.

Barren-ground Caribou

As in past years, only residents of WMZ 76 were allowed to hunt barren-ground caribou. Hunters were permitted to purchase two either-sex licences. In 1998, 13 first sport licences and 9 second sport licences were sold.

Season dates and bag limits for both sport hunters and subsistence hunting licence holders in 1999 will be similar to those of 1998.

Big Game Allocation Changes

1998 Big Game Draw

Allocation changes for the 1998 Big Game Draw were as follows:

- The draw moose season on the west side of the province (WMZs 47, 53, 67, 68N and 68S) remained closed to protect cow moose and promote population growth.
- Either-sex mule deer allocations were reduced (33%) to reduce harvest of the buck segment of the mule deer population. Non-trophy quotas were substantially (64%) reduced to protect the female segment of the population, to promote population growth, and to allow population structure to return to more natural levels.
- The pronghorn antelope season remained closed due to low population size and poor survival of young.
- There were no major changes to the elk draw season in 1998.

The total number of applicants for all species in 1998 (30,540, Table 5) was 1.9% less than in 1997 (31,122). For an in-depth review of the results from the 1998 Big Game Draw, refer to the December, 1998 Wildlife Bulletin 98-F&W-8.

Table 5. Licence allocations, eligible and successful applicants by priority pool for the 1998 draw seasons.

Species	Licences Available (Issued)	Super A Applicants	Successful Super A Applicants	Pool A Applicants	Successful Pool A Applicants	Pool B Applicants	Successful Pool B Applicants	Pool C Applicants	Successful Pool C Applicants	Total Eligible Applicants
Elk	1,325	2,883	781	2,955	549	559	9	588	12	6,965
	(1,339)		27%*		19%*		<1%*		<1%*	19%*
Moose	900	3,087	636	2,966	212	785	21	751	31	7,580
	(901)		21%*		1%*		<1%*		<1%*	12%*
Mule Deer	3,830	1,905	1,451	6,657	2,380	3,059	16	2,557	14	14,178
	(3,841)		76%*		35%*		<1%*		<1%*	27%*
Non-trophy Mule Deer	250	208	123	930	129	441	0	209	0	1,788
	(252)		59%*		14%*		0%*		0%*	14%*
Total	6,305	8,083	2,991	13,508	3,250	4,844	46	4,556	57	30,540
	(6,333)		37%*		24%*		<1%*		<1%*	21%*

* % of successful applicants.

1998 Regular Season Changes

The big game regular season allocation changes were as follows:

- standardized hunter dress codes requirements between rifle elk seasons and white-tailed deer archery and muzzleloader hunting seasons because of season overlap.
- non-trophy white-tailed deer hunting opportunities were reduced and second non-trophy white-tailed deer bag limits were eliminated in all zones (except Prince Albert urban zone for archers) because of significant 1997/98 winter mortality in the grassland and parkland WMZs.

Game Birds

Ducks

The 1998 duck bag limit remained at 8 birds/day, which is considered to be liberal, and is equivalent to bag limits in effect during the stabilized regulation period (1979-84). The estimated harvest of ducks in Saskatchewan during 1998 was 205,545 birds, a 1% increase from the 204,211 taken in 1997, but remains 46% below the 1979-84 average (Table 1, Figure 1 - Duck Section). A total of 129,461 mallards were harvested in 1998, an decrease of 3% from the 133,017 taken in 1997, but remains 55% below the 286,018 bagged annually during the period of stabilized regulations (Table 2, Figure 2 - Duck Section). Canvasback harvest decreased 77% from 1,708 in 199 to 392 in 1998, and is 89% below the 1979-84 average of 3,504 (Table 3 - Duck Section). Pintail harvest decreased by 19% from 13,656 in 1997 to 111,099 in 1998, and was 28% below the 1979-84 average (Table 3 - Duck Section).

Southern Saskatchewan recorded 1.7 million ponds in July 1998, an decrease of 14% from the 1.7 million recorded in 1996, and remains 57% and 83% above the 10-year and long-term (1955-1996) averages (Table 4 - Duck Section). The 1998 duck brood index (67,300) for southern Saskatchewan decreased 58% from 1997 (161,300) and was 16% and 47% above the 10-year and long-term (1955-96) averages (Appendix 2 - Duck Section). May 1999 ponds in southern Saskatchewan were up 72% from 1998, and were 33% and 26% above the 10-year and long-term averages (Table 6 - Duck Section). In May 1999, the total duck breeding population in southern Saskatchewan (strata 30-35) was 9.7 million, an increase of 16% from the 8.4 million estimated in 1998. Divers and dabblers were 9% and 17% above 1998 estimates, 24% and 62% above the 10-year average, and 20% and 33% above the long-term (1955-97) average. Mallard numbers increased 3% compared to 1998, and were 60% above the 10-year average. Pintails increased by 59% from 1998, and were 62% above the 10-year average. Canvasback numbers increased 3% from 1998, but remained 50% and 39% above the 10-year and long-term (1955-97) averages (Table 4 - Duck Section).

With the exception of calendar adjustments, there were no regulatory changes to the duck season for 1998.

Geese

In 1998, there were 280,011 geese harvested, approximately the same as the previous year. Canada geese (136,736) comprised 49% of the harvest followed by lesser snow (68,985), white-fronted (51,204), and Ross' (23,086) geese, each contributing 25%, 18% and 8%, respectively, of the total harvest.

Populations of large Canada geese continue to thrive in agricultural Saskatchewan. Western Prairie (WPP) and Great Plains (GPP) populations have increased in recent years and are currently above upper regulatory thresholds identified in the Central Flyway Tall Goose Plan. Hi-Line (giant Canada geese), Short Grass Prairie (SGP) and Tall Grass Prairie (TGP) populations are all at, or above, objectives identified in their respective Central Flyway management plans. Lesser snow and Ross' geese have

steadily increased over the past few years and are well above objectives established in Central Flyway management plans. The overpopulation of white geese is a major concern to wildlife managers and Saskatchewan sport hunters are encouraged to harvest more snow geese.

Sandhill Cranes

The crane harvest in 1998 was 8,636 birds, an increase of 87% and 89% from 1997 and the 10-year average. The 1998 spring population estimate of 544,500 birds represents a 1% decrease from the 550,900 recorded in 1997.

The 1998 sandhill crane season were extended to December 12 in all WMZs, to coincide with the closing of the goose hunting season.

Upland Birds

Upland bird harvest in 1998 (190,288 birds) was greater than 1997 (144,413 birds), and the 10-year average (170,804 birds). Ruffed grouse comprised 43% (81,143 birds), Hungarian partridge comprised 27% (51,177 birds), sharp-tailed grouse comprised 23% (44,275 birds), pheasant comprised 2% (3,075 birds) and spruce grouse comprised 6% (10,618 birds), respectively, of the total upland bird harvest in 1998. The number of upland bird hunter-days in 1998 (66,817 hunter-days) was greater than in 1997 (50,502 hunter-days), but less than the 10-year mean (70,579 hunter-days).

The sharp-tailed grouse 1998 reproduction index (# young/adult; based on wing samples from hunters) remains lower than the long term average, which indicates a low potential recruitment of young into the sharp-tailed grouse breeding population for 1999. Spring breeding populations surveys conducted for sharp-tailed grouse in 1999 (1.55 males/km^2) indicate a lower than average (1.70 males/km^2 5-yr mean) breeding population density. The 1998 reproduction index for Hungarian partridge was lower relative to the long term average, which indicates a low potential recruitment of young into the breeding population for 1999 as well. Spring breeding population surveys were not conducted for Hungarian partridge in 1999 or pheasant. Hunter success for ruffed grouse was similar to 1997, and above the 10-year average, indicating the population is at the peak of it's cycle and is perhaps beginning to decline. Spruce grouse populations tend to mimic those of ruffed grouse.

No changes to seasons or bag limits are planned for the 1999 hunting season.

Table of Contents

	Page
Executive Summary	i
Table of Contents	x
List of Tables	xiv
List of Figures	xvii
List of Appendices	xviii
Methods	1
1.0 General Information	1
2.0 Data Collection Techniques	1
2.1 Population Surveys	1
2.1.1 Big Game	1
2.1.2 Upland Game Birds	2
2.2 Biological Data Collection	2
2.2.1 Big Game	3
2.2.2 Upland Game Birds	3
2.3 Hunting and Harvest Statistics	4
2.3.1 Licence Sales	4
2.3.2 Hunter Harvest Survey	4
3.0 Literature Cited	5
White-tailed Deer *(Odocoileus virginianus)*	6
1.0 Long-term Management Objectives	6
2.0 Population Status	6
2.1 Population Density Surveys	7
2.2 Population Structure Surveys	7
2.3 Biological Data Collection	11
2.3.1 Age Structure of Harvested Animals	11
2.4 Mortality	12
2.4.1 Review of the 1998 Hunting Season	12
2.4.1.1 Licence Sales	12
2.4.1.2 Hunting Activity and Harvest	14
2.4.1.3 Harvest Structure	18
2.4.1.4 Buck Harvest	20
2.4.2 Subsistence Harvest	22
2.4.3 Depredation Hunts	22
2.4.4 Impact of Weather Severity	22
3.0 1999 Management Objectives and Strategies	22
3.1 Southern Management Strategies	23
3.2 Northern Management Strategies	23
4.0 Appendices	24

Mule Deer *(Odocoileus hemionus)* 32
1.0 Long-term Management Objectives 32
2.0 Population Status 32
2.1 Provincial Overview 32
2.1.1 Population Size/Density Surveys 32
2.1.2 Population Structure Surveys 34
2.2 Mortality 35
2.2.1 Review of the 1998 Hunting Seasons 35
2.2.1.1 Licence Sales 35
2.2.1.2 Hunting Activity and Harvest 35
3.0 Management Objectives and Strategies 38
4.0 Appendices 39

Elk *(Cervus elaphus)* 47
1.0 Long-term Management Objectives 47
2.0 Population Status 47
2.1 Provincial Overview 47
2.1.1 Population Size/Density Surveys 48
2.1.2 Population Structure Surveys 49
2.2 Biological Data Collection 50
2.2.1 Age Structure of Harvested Animals 50
2.3 Mortality 51
2.3.1 Review of the 1998 Hunting Seasons 51
2.3.1.1 Licence Sales 51
2.3.1.2 Hunting Activity and Harvest 52
2.3.1.3 Elk Depredation Hunts 58
2.4 Elk Relocation Program 58
3.0 Management Objectives and Strategies 58
3.1 Northern Management Strategies 58
3.2 Southern Management Strategies 59
4.0 Appendix 60
5.0 Literature Cited 60

Moose *(Alces alces)* 61
1.0 Long-term Management Objectives 61
2.0 Population Status 61
2.1 Provincial Overview 61
2.1.1 Population Size/Density Surveys 62
2.1.2 Population Structure Surveys 63
2.2 Biological Data Collection 64
2.2.1 Age Structure of Harvested Animals 64
2.3 Mortality 66
2.3.1 Moose Tick *(Dermacentus albipictus)* Index 66
2.3.2 Review of the 1998 Hunting Seasons 66
2.3.2.1 Licence Sales 66

2.3.2.2 Hunting Activity and Harvest 67
2.3.2.3 Harvest Structure 72
2.4 Population Status by Moose Management Unit 73
3.0 Management Objectives and Strategies 74
3.1 Northern Management Strategies 74
3.2 Southern Management Strategies 75
4.0 Appendices 76
5.0 Literature Cited 78

Barren-ground Caribou *(Rangifer tarandus)* 79
1.0 Long-term Management Objectives 79
2.0 Population Status 79
2.1 Provincial Overview 79
2.2 Population Indicators 80
2.3 Biological Data Collection 80
2.4 Mortality 80
2.4.1 Licenced Harvest 80
2.4.2 Subsistence Harvest 80
3.0 Management Objectives and Strategies 80

Pronghorn Antelope *(Antilocapra americana)* 82
1.0 Long-term Management Objectives 82
2.0 Population Status 82
2.1 Provincial Overview 82
2.1.1 Population Size/Density Surveys 83
2.1.2 Population Structure Surveys 84
2.2 Mortality 85
2.3 Current Population Status 85
3.0 Management Objectives and Strategies 86
4.0 Literature Cited 86

Black Bear *(Ursus americanus)* 87
1.0 Long-term Management Objectives 87
2.0 Population Status 87
2.1 Provincial Overview 87
2.2 Population Indicators 88
2.2.1 Hunter Success and Effort 88
2.2.2 Mean Age of Females 88
2.2.3 Harvest Adult Sex Ratio 89
2.2.4 Proportion of Cubs in Harvest 89
2.2.5 Color Phase Ratio 89
2.3 Biological Data Collection 90
2.4 Mortality 91
2.4.1 Licenced Harvest 91
2.4.1.1 Licence Sales 91

2.4.1.2 Hunting Activity and Harvest 91
2.4.1.3 Harvest Structure 93
2.4.2 Trapping 94
2.4.3 Subsistence Harvest 94
2.4.4 Nuisance Bears 94
3.0 Management Objectives and Strategies 95

Migratory Birds 96
Ducks 98
Geese 110
Sandhill Cranes 115

Upland Birds 117
1.0 Long-term Management Objectives 117
2.0 Population Status 117
2.1 Provincial Overview 117
2.2 Biological Data Collection 118
2.2.1 Reproduction Index 118
2.2.1.1 Sharp-tailed Grouse 118
2.2.1.2 Hungarian Partridge 120
2.3 Breeding Population Surveys 120
2.3.1 Sharp-tailed Grouse 122
2.3.2 Hungarian Partridge 122
2.3.3 Pheasant 122
2.4 Mortality 123
2.4.1 Licenced Harvest 123
2.4.1.1 Licence Sales 123
2.4.1.2 Hunting Activity and Harvest 123
3.0 Management Objectives and Strategies 128
4.0 Appendix 129

General Appendices 142

List of Tables

		Page
White-tailed Deer		
1	White-tailed deer population estimates based on stratified random block aerial survey sampling, *1993/94 - 1998/99*	8
2	Provincial white-tailed deer population structure based on pre-season (CDMS) field observations, September to November, 1995 - 98	9
3	Provincial white-tailed deer licence sales, 1995 - 98	12
4	Provincial resident white-tailed deer harvest, 1998	14
5	Resident either-sex white-tailed deer rifle harvest by ecozone, 1998	16
6	Resident non-trophy white-tailed deer rifle harvest by ecozone, 1998	17
7	Provincial white-tailed deer harvest structure of the resident either-sex rifle season, 1995 - 98	18
8	Comparison of total white-tailed deer harvest and buck harvest between 1991 and 1998	20
9	Resident white-tailed deer buck harvest by antler class, based on the Hunter Harvest Survey, 1997 and 1998	21
10	Non-resident white-tailed deer buck harvest by antler class, based on outfitter records, 1997 and 1998	21
11	Canadian resident white-tailed deer buck harvest by antler class, based on a special mail survey, 1997 and 1998	21
Mule Deer		
1	Mule deer population survey summary, WMZs 9 - 12	33
2	Provincial mule deer population structure based on pre-season field observations, September - November, 1995 - 98	34
3	Fall aerial survey of mule deer herd structure, 1993-98	34
4	Provincial mule deer licence sales, 1995 - 1998	35
5	Provincial mule deer harvest, all licence types and seasons pooled, 1998	36
6	Estimated hunting activity and harvest during the either-sex draw, by season and ecozone, 1998	36
7	Estimated hunting activity and harvest during the non-trophy draw, by season and ecozone, 1998	37
8	Estimated hunter success and harvest pressure during the regular mule deer archery season, 1998	37
Elk		
1	Winter elk population objectives and survey block densities based on aerial survey sampling	48
2	Aerial survey results of winter herd structure	49
3	Summary of cementum age classes of harvested elk, 1996 - 1998 hunting seasons	50
4	Provincial elk licence sales	51
5	Estimated provincial elk harvest, 1998 (based on the Hunter Harvest Survey	52
6	A comparison of the estimated elk hunter success by season type, 1994-98	52

7 Estimated hunter success and harvest pressure during the elk regular archery seasons, 1998 (estimated from the hunter Harvest Survey 54
8 Estimated hunter success and harvest pressure during the elk regular rifle (Sept. 14 to 26 and Nov. 16 to 28) hunting seasons, 1998 (estimated from the Hunter Harvest Survey 55
9 Estimated hunter success and harvest pressure during the draw elk rifle seasons, 1998 (based on Hunter Harvest Survey) 56
10 Hunter success and harvest based on telephone survey interviews, draw seasons, 1998 57

Moose

1 Moose population objectives and survey block densities based on aerial survey sampling 62
2 Aerial survey results of winter herd structure 63
3 Summary of cementum age classes of harvested moose, 1996 - 1998 hunting seasons 64
4 Mean age of adult (2 ½ years or older) animals from check stations and comparison of 1 1/2-31/2 year old males to mature males, 1978-98 65
5 Provincial moose licence sales, 1995-1998 66
6 Comparison of resident hunter harvest and success, 1995-1998 67
7 Moose harvest by licence type, 1994-1998 69
8 Comparison of moose harvest in the early vs late regular rifle seasons, 1984-1998 70
9 Hunter survey results of draw seasons in Southern WMZs, 1996 - 1998 71
10 Summary of the Fort a la Corne harvest structure, 1987-1998 71
11 Provincial moose harvest structure, 1995-1998 72
12 Provincial harvest structure for the early draw season, 1984-1998 72

Pronghorn Antelope

1 Comparison of pronghorn antelope population estimates by survey block, 1990-97 83
2 Number of pronghorn antelope in each sex and age class by WMZ on the July 1998 aerial survey 84
3 Provincial pronghorn antelope herd structure, 1989-98 85

Black Bear

1 Harvest structure for black bears, Saskatchewan, 1986-98 89
2 Color phase ratios for black bears harvested in Saskatchewan, 1986-98 90
3 Average age of male and female black bears harvested in Saskatchewan, 1986-98 90
4 Provincial black bear licence sales, 1995-98 91
5 Provincial black bear harvest activity by season for resident hunters, 1998 92
6 Provincial black bear harvest activity by season for non-resident hunters, 1998 92
7 Hunter success and harvest, 1994-98 93

Migratory Birds

Ducks

1 Estimated harvest of ducks in Saskatchewan, 1979-98 by zone 98
2 Estimated harvest of Mallards in Saskatchewan, 1979-98 by zone 99
3 Estimated harvest of Northern Pintails and Canvasbacks in Saskatchewan, 1979-98 101
4 Status of waterfowl breeding population estimates by species and stratum with comparisons against the previous year, the previous 10-year average, and the long term average 102

Geese

1 Goose harvest in Saskatchewan, 1986-98 110

Sandhill Cranes

1 Estimated harvest of Sandhill Cranes in Saskatchewan, 1986-98 115

Upland Birds

1 Sharp-tailed grouse reproduction index by ecozone, 1986-98 118
2 Hungarian partridge reproduction index, 1986-98 120
3 Sharp-tailed grouse breeding population surveys, April to May, 1993-99 121
4 Hungarian partridge breeding population surveys, spring 1997-98 122
5 Cock pheasant breeding population surveys, spring 1992-98 123
6 Provincial game bird licence sales, 1995-1998 123
7 Hunting activity and harvest of upland birds for Saskatchewan, 1988-98 124
8 Upland bird harvest activity by ecozone, 1998 127

List of Figures

Page

White-tailed Deer

1 White-tailed deer fawn production in various Saskatchewan ecozones based on pre-season (CDMS) field observations, September to November, 1986-98 9
2 White-tailed deer fawn production in the Parkland ecozone based on pre-season (CDMS) field observations, September to November, 1986-98 10
3 Yearling to mature buck ratios in various Saskatchewan ecozones based on pre-season (CDMS) observations, September to November, 1986-98 10
4 Number of white-tailed deer bucks harvested by age class in WMZs 56-69, 1998 11
5 Provincial white-tailed deer licence sales, 1971-98 13
6 Second either-sex and non-trophy licence sales, 1971-98 13
7 Southern Saskatchewan resident white-tailed deer harvest, 1986-98 15
8 Northern Saskatchewan resident white-tailed deer harvest, 1986-98 17
9 Southern Saskatchewan white-tailed deer buck/doe harvest, 1988-98 19
10 Northern Saskatchewan white-tailed deer buck/doe harvest, 1988-98 19

Elk

1 Provincial elk population estimate in relation to long-term population objective 47
2 Elk licence allocations and 10-year average for regular and draw seasons, 1988-98 ... 51
3 Trends in the elk harvest for regular and draw seasons, 1968-98 53
4 Trends in the hunter success rates for regular and draw seasons, 1968-98 53

Moose

1 Changes in winter moose population in Saskatchewan, 1954 to present 61
2 Number of moose hunters and harvest, 1958-98 68
3 Total moose hunter-days and hunter-days/moose, 1966-98 68

Pronghorn Antelope

1 Changes in pronghorn populations in Saskatchewan, 1970 to present 82
2 Kid:doe ratios of antelope in July and September, 1989-98 84

Black Bear

1 Hunter-days/bear and hunter success for Saskatchewan resident hunters, 1986-98 ... 88
2 Harvest estimates for black bears in Saskatchewan, 1986-98 93
3 Annual number of bear pelts marketed by commercial trapping, 1970 - 1998 94

Migratory Birds

Ducks

1 Saskatchewan duck harvest, 1979-98 99
2 Saskatchewan mallard harvest, 1979-98 100

Upland Birds

1 Comparison of annual reproductive success to provincial breeding population densities 119
2 Long-term trends in upland bird harvest and hunter numbers, 1974-98 126

List of Appendices

Page

White-tailed Deer

1 White-tailed deer population structure based on CDMS pre-season field observations, September to November, 1994-98 24
2 Resident either-sex white-tailed deer harvest by ecozone and WMZ, 1998 27
3 Resident first non-trophy white-tailed deer rifle harvest by ecozone and WMZ, 1998 30
4 Resident second non-trophy white-tailed deer rifle harvest by ecozone and WMZ, 1998 31

Mule Deer

1 Estimated hunter success and harvest pressure by WMZ during the draw either-sex mule deer rifle season, 1998 39
2 Estimated hunter success and harvest pressure by WMZ during the regular archery mule deer season, 1998 41
3 Estimated hunter success and harvest pressure by WMZ during the draw either-sex archery mule deer season, 1998 42
4 Estimated hunter success and harvest pressure by WMZ during the draw either-sex muzzleloader mule deer season, 1998 43
5 Estimated hunter success and harvest pressure by WMZ during the 1998 non-trophy mule deer season (all weapon types) 44
6 Mule deer licence quotas, 1994-98 45

Elk

1 Licenced elk harvest, Moose Mountain Provincial Park (WMZ 33), 1973-98 60

Moose

1 Draw season moose harvest, 1995-1998 76
2 Harvest and hunter success for the regular (bull-calf) moose seasons, 1995-1998 77
3 Comparison of early vs late regular rifle seasons, porcupine Forest (WMZ 56 and 57) . 78

Migratory Birds

Ducks

1 Long-term trend in July pond indices by stratum in southern Saskatchewan, comparing 1998 with 1997, the 1985-97 average, the 1955-97 long-term average, and comparison of May with July ponds in 1998 104
2 Long-term trend in waterfowl brood and late-nesting indices in southern Saskatchewan, 1955-99 106
3 Long-term trend in adjusted May pond estimates by stratum with comparisons against the previous year, the previous 10-year average, and the long-term average (estimates in thousands), 1961-99 108

4 Saskatchewan duck hunting regulations, 1986-99 109

Geese

1 Saskatchewan goose hunting regulations, 1988-99 113

Upland Birds

1 Sharp-tailed grouse hunting activity and harvest by ecozone and WMZ, 1998 129
2 Ruffed grouse hunting activity and harvest by ecozone and WMZ, 1998 132
3 Spruce grouse hunting activity and harvest by ecozone and WMZ, 1998 135
4 Hungarian partridge hunting activity and harvest by ecozone and WMZ, 1998 137
5 Saskatchewan resident pheasant hunting activity and harvest by ecozone and WMZ, 1998 140

General Appendix

1 Saskatchewan Hunting and Trapping Guide 1998 142
2 1998 Hunter Harvest Survey 143

Methods

1.0 General Information

Hunting season dates, bag limits, licence quotas and a WMZ map for the 1998/99 game seasons are presented in the Saskatchewan Hunting and Trapping Guide 1998 (General Appendix 1). The 1998 Hunter Survey is presented in General Appendix 2.

2.0 Data Collection Techniques

2.1 Population Surveys

2.1.1 Big Game

The aerial survey remains the fundamental technique used to collect big game population information for Saskatchewan species. Surveys are primarily conducted in the winter months when there is a good snow background on which to observe animals and deciduous leaf cover is lacking. Notable exceptions are pronghorn antelope surveys which are flown in the late spring to late fall. Generally, the survey technique employed depends upon the species being observed and the type of information the survey is designed to collect. The following is a brief description of survey methodologies used by SERM:

- **Trend Line Aerial Survey** design is the oldest type presently used in the province. Some of the first trend line surveys flown in Saskatchewan occurred in 1949 when Montana, Alberta and Saskatchewan combined efforts to estimate their collective pronghorn antelope resource. The survey design basically consists of transect lines a fixed distance apart and a fixed distance in length which are flown periodically (eg. yearly). Observers in the aircraft look out a fixed distance from the aircraft depending upon survey design and record animal sightings. See Dirschl (1960) and Hayne (1949) for a more detailed description of trend line aerial survey techniques.

- **Line-Transect Survey** technique design is very similar to that of trend lines in that predetermined lines over a designated area are flown. However, the major procedural difference sees the placement of animal clusters into distant bands perpendicular to the transect line. Survey data are entered into a computer program that creates five best-fit mathematical models of the population density estimator. The theoretical advantages of this survey design is that each density estimator has confidence limits placed on its value, it is as cost effective as trend line surveys and observability biases that increase with distance from the aircraft are accounted for in the mathematical model calculations. A more detailed explanation of line transect methodology used in Saskatchewan was reported by Killaby et al (1992).

- **Stratified - Random Block Survey** areas are stratified into sample units (quadrats or blocks) based

on habitat type. Sample units are randomly selected from each strata. With this method, observers strive for a population density estimate of ±20% within 90% CL for the survey area. Refer to Stewart (1983) for a complete explanation of the stratified random block survey technique used in Saskatchewan.

- **Modified Gasaway Survey** - Beginning in the winter of 1997/98, a modified form of stratified random quadrat surveys based on the method described by Gasaway et al. (1986), and Lynch and Schumaker (1995) was adopted for moose. The modified Gasaway survey method differs from that used in previous years in that the survey units are larger and are stratified based on population densities determined from a pre-flight survey versus stratification based on habitat type. Once all survey units are classified into population density strata, survey units are selected from each strata at random and intensely searched by helicopter. Observers strive for a population density estimate of ±20% within 95%CL for the survey area. Population structure data is collected concurrently during the intensive search.

- **Population Structure Surveys (aerial based)** are designed to give the manager an age (i.e. adult vs. young) and sex composition of big game populations. Structures are usually presented as a ratio of adult males or young per adult female or 100 adult females. Flight paths are usually irregular and occur over habitat types where the probability of sighting animals is high. Minimum animal observations within desired confidence limits are calculated before the survey per Czaplewski et al. (1983) and Scheaffer et al. (1990).

- **Co-operative Deer Management Survey (CDMS)**. A SERM sponsored ground-based survey of white-tailed deer and mule deer population structures is conducted annually between Sep. 1 and Nov. 30, inclusive. The survey is conducted with the assistance of conservation officers, members of sport hunter groups and the general public. Co-operators classify observed deer by species (whitetail or mule), sex (male or female), age (fawn or adult), productivity (#fawns/doe) and provided information on buck antler development. These surveys supply valuable information on herd structures in many areas of the province where aerial population structure surveys were not carried out due to provincial monitoring priorities and limited budgets.

- **Spotlight Surveys** are a less expensive, ground-based population survey technique that is conducted from time to time often to supplement areas where CDMS samples were to small to be meaningful. These are primarily conducted on deer at night and give good composition estimates for herds in localized situations. Observers usually drive into a field or along a road and shine a powerful spotlight over the area of view. The species, number, age and sex is determined for the night feeding deer.

2.1.2 Upland Game Birds

The spring surveys of breeding areas supply important population indices from which pre-season population estimates are derived. The following is a brief description of the breeding population survey used for each of the major upland bird species:

Sharp-tailed -Grouse

- Males that congregate on dancing grounds or leks within a specific survey block are counted. The

resultant density of males provides an index to the total size of the sharptail population (we assume a one to one relationship of adult males to adult females). Surveys are conducted each year between April 15 and May 15 (peak activity mid to late April) to coincide with male habituation to the lek. Ideal observation times are from day break to 0800 hours, but are also conducted in the evening before sunset.

Hungarian Partridge

- This simple spring survey, initiated in 1979, involves 15 to 20 abandoned farmsteads on a survey route. Abandoned farmsteads constitute the most readily identified partridge habitat. The survey is conducted from about 1000 hours to 1500 hours preferably on sunny days with light winds. Surveyors thoroughly search each farmstead counting the pairs of partridge flushed.

Pheasant

- Territorial males, which broadcast their presence by crowing, are counted every mile on a 20 mile route. Crows heard within a two minute period are considered originating from different cocks. Surveys are conducted during early morning hours between April 7 and May 15. The detailed survey technique for pheasants is available from SERM, Fish and Wildlife Branch.

2.2 Biological Data Collection

2.2.1 Big Game

As in past years, hunters reporting to designated collection points for big game were eligible to enter a draw for major prizes under the Wildlife Co-operator Awards Program. All hunters providing the required biological samples received a limited edition Wildlife Co-operator lapel pin.

Twelve (12) privately-operated collection points and 76 department offices were used to obtain samples to determine sex, age and antler configuration for moose and elk, and sex/age of harvested black bears (General Appendix 1). Age determinations for animals older than young of the year were based on tooth cementum deposition. Cementum analysis for moose was performed by Wildlife Branch staff in Regina whereas bear and elk teeth were sent to Matson's Laboratories in Milltown, Montana, USA for cementum age analysis.

2.2.2 Upland Game Birds

Reproduction indices depend entirely on the submission of wing and tail feather samples donated by hunters. Immature (i.e. young of the year) and adult ages for **sharp-tailed grouse** were determined by examination of all primary flight feathers on collected wings. Unworn or the presence of blood sheaths on erupting feathers for primaries 9 and 10 indicated adult status (the rough and worn outer primaries of immature birds are retained throughout the first winter). A transverse black bar pattern (female) or a longitudinal pattern of light and dark markings (male) on the two central tail feathers indicated the sex of the bird. **Hungarian partridge** sex was determined by the vermiculation on scapular and median wing coverts. The male has dark shoulder feathers, each with a single median stripe. The female's coverts

are lighter in colour and each has a wide median stripe intersected by two to four crossbars. The bird's age (immature or adult) was determined by the same method as sharp-tailed grouse.

2.3 Hunting and Harvest Statistics

2.3.1 Licence Sales

Saskatchewan Environment and Resource Management's (SERM) Financial and Administrative Services Branch (FAS) tabulated and mailed computerized draw licences to hunters. These included elk, moose, either-sex and non-trophy mule deer and antelope licences.

Over-the-counter licences for white-tailed deer, black bear, moose (bull-calf), elk (bulls-only) and game bird seasons were purchased through approximately 1,000 public vendors and SERM district offices located throughout the province. Vendors returned sold and unsold licences to FAS' Vendor Unit which then determined provincial licence sales figures for each game species.

2.3.2 Hunter Harvest Survey

A mail-out questionnaire (General Appendix 2) was used to survey big game and upland game bird harvest and hunting activity by licenced resident hunters. Phone surveys were used to supplement the information for elk and moose. Outfitter records were used to collect non-resident harvest and hunting activities for White-tailed Deer and Black Bear. Collection of waterfowl harvest and hunting statistics was conducted by the Canadian Wildlife Service using their annual National Harvest Survey.

Hunters were selected for each of the 1998 Big Game Draw species. This sample was then augmented with 1997 white-tailed deer, bull-calf moose and bull-only elk hunters. Regular and draw licence holders were cross-referenced to avoid duplication of hunter sampling. In addition, some 1998 draw elk hunters were sent questionnaires to ensure an adequate sample of elk hunters in the north-east wildlife management zones. White-tailed deer are our most important big game species based on hunter participation and economic value, yet may be the most difficult species to obtain adequate samples for each WMZ. Therefore, the timing of the survey was meant to ensure the best possible number of survey returns with white-tailed deer hunt information. Each questionnaire was numbered uniquely and mailed November 1998 to a total of 27,500 resident hunters. The survey return rate was approximately 28%, but only 23% were usable.

Resident hunters were not specifically sampled for upland game bird hunt activity as acceptable survey representation came from the sampled big game hunters. Killaby (1993) suggested that most resident game bird hunters also participate in big game hunting. Therefore, a large sample of big game hunters would also equate to an adequate sample of upland game bird hunters.

Questionnaire surveys, identical to the resident hunter survey, were mailed to approximately 200 Canadian resident bird hunters and 800 non-resident of Canada bird hunters. There were no surveys returned from these two categories that reported big game hunting activity. As a result, the section dealing with non-resident hunting comes exclusively from outfitter records.

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White-tailed Deer *(Odocoileus virginianus)*

by Adam Schmidt

1.0 Long-term Management Objectives

A formal long-term management plan has not been developed for white-tailed deer. The following interim objectives will be used until such time as a long-term plan is available.

- A provincial wintering population objective has not been established.
- To maintain a pre-harvest herd structure >40 Bucks:100 Does:90 Fawns.
- To maintain the current amount of occupied habitat.
- Once conservation needs are met, to provide priority allocation for subsistence food needs.
- Sustainable harvest levels have not been determined for white-tailed deer populations in Saskatchewan.
- To obtain the informed consent of all potentially affected interests in structuring area specific population objectives, management strategies and regulations.

2.0 Population Status

The status of the white-tailed deer population in Saskatchewan is determined annually from information provided by aerial population density surveys, pre-season wildlife observations collected by an annual Co-operative Deer Management Survey (CDMS), weather severity measurements, habitat condition evaluations, biological sample collections, deer necropsies, dead deer searches, and field reports from the general public, landowners and Saskatchewan Environment and Resource Management (SERM) staff. Deviations from the established norm are examined to assess whether populations are changing because of management strategies or other environmental factors.

Saskatchewan's deer herd occupies the northern limits of the white-tailed deer range in North America. As such, winter weather is the limiting factor on our provincial deer population. White-tailed deer populations have responded to the relatively mild winters of the last decade and continued to increase in most areas of the province. Deer populations in the southwest **Grassland** zones appear to be stable but below the highs of the late 1980's. Reduced productivity compared to the late 1980's and early 1990's continues to be a concern. In the **Farmland** ecozone, the shortage of quality winter habitat limits deer populations, especially in the western Farmland zones. Eastern Farmland zones support better habitat and whitetails have responded with increasing populations. Deer densities in the **Southeastern Parkland** zones continued to increase from the losses incurred during the severe winter of 1984-85 and by 1992 had attained levels intolerable to landowners. Liberal hunting seasons, depredation hunt strategies and two severe winters have reduced populations. However, in some southeastern areas landowners still insist populations are too high. In the **Northern Parkland** zones, reports from landowners and field staff indicated that whitetail densities have increased. In the **Forest Fringe** and

Forest ecozones, whitetail populations are subjected to higher winter mortality on a more frequent basis than southern deer populations, but the last several winters have been relatively mild and allowed populations to increase accordingly.

2.1 Population Density Surveys

No aerial surveys were flown in the winter of 1998/99. Results of previous surveys are listed in Table 1.

2.2 Population Structure Surveys

A Cooperative Deer Management Survey (CDMS) is conducted annually using volunteer observers from the general public, wildlife interest groups and department field staff. The survey was conducted between September 1 and November 30, 1998. Observers classified 16,834 white-tailed deer by sex and age to determine the pre-season herd structure of the provincial deer population (Table 2, Appendix 1). Total deer observations increased 68% compared to 1997, but were still 24% less than observations reported in 1995.

On a provincial scale, pre-season fawn to doe ratios were similar to 1996 and 1997 which suggested reduced fawn production compared to previous years (Table 2). The Grassland ecozone fawn/doe ratio recovered to the 1994 ratio but is still below the peak ratios recorded in the late 1980's and early 1990's. Farmland ecozone fawn/doe ratios have shown a gradual downward trend since 1991(Figure 1). In the Parkland ecozone, fawn production increased compared to 1996 and 1997 but was still significantly below the high recorded in the early 1990's (Figure 2).

Buck/doe indices ranged from 0.37 to 0.41 throughout the province. Ratios were similar to 1997 in all ecozones except the Forest ecozone which decreased significantly. This decrease may be an artifact to the small sample from this ecozone (Table 2) in 1997. The percentage of yearlings to mature bucks in the population increased in all ecozones (Figure 3) after declining in the two previous years.

Many individual zones had small sample sizes. Therefore, the 1998 observations may not have accurately reflected the population structure for that zone. As a result, only those zones with $\geq$300 observations should be used for comparison. The Grassland ecozone fawn/doe ratios ranged from 0.54 to 2.00 in individual zones but averaged 0.84 fawns/doe over the entire ecozone (Appendix 1). Only WMZ 4 had a sufficient sample size to calculate a meaningful population structure ratio. In the Farmland ecozone, ratios ranged from 0.34 to 1.50 fawns/doe and averaged 0.82 fawns/doe over the ecozone. Six WMZs had a sufficient sample size to calculate meaningful population structure ratios compared to 1 in 1997. Eight of the Parkland WMZs had >300 observations. Ratios ranged from 0.69 to 1.75 fawns/doe and averaged 1.00. Forest Fringe ecozone fawn/doe ratios ranged from 0.82 to

Table 1. White-tailed deer population estimates based on stratified random block aerial survey sampling, 1993/94 - 1998/99.

Survey Block	WMZ	Area km²	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99	
			±95%CI[a]	Deer/km²	±95%CI[a]	Deer/km²	±95%CI[a]	Deer/km²	±95%CI[a]	Deer/km²	±95%CI[a]	Deer/km²	±95%CI[a]	Deer/km²
Alida	32	1,492	—	—	2,594±17%	1.7	—	—	—	—	—	—	—	—
Bronson Forest[b]	68	3,186	—	—	—	—	—	—	—	—	—	—	—	—
Corning	17&33	—	—	—	—	—	—	—	—	—	—	—	—	—
Cumberland South[b]	60	—	—	—	—	—	—	—	—	—	—	—	—	—
Divide[b]	67	3,385	—	—	3,898±17%	1.2	—	—	—	—	—	—	—	—
Duck Mountain[b]	37	479	—	—	—	—	—	—	—	—	—	—	—	—
Dundurn	21&30	1,480	—	—	—	—	—	—	—	—	—	—	—	—
Eastend	6	1,370	—	—	—	—	—	—	—	—	—	—	—	—
Forest Fringe	50,51,62-64	4,311	—	—	—	—	—	—	—	—	—	—	—	—
Fort a la Corne[c]	50		—	—	—	—	—	—	—	—	—	—	—	—
Kipling	33	1,494	—	—	—	—	—	—	—	—	—	—	—	—
Last Mountain Lake	21	2,505	—	—	—	—	—	—	—	—	—	—	—	—
Manitou	46	2,129	—	—	—	—	—	—	3370±28%	1.6	—	—	—	—
Marie Hill	46	1,119	—	—	—	—	—	—	—	—	—	—	—	—
Melville	37	5,885	—	—	—	—	—	—	—	—	—	—	—	—
Moose Mountain[b]	33	681	—	—	—	—	—	—	—	—	—	—	—	—
Moosomin	34	932	4,763±22%	5.1	—	—	2,580±16%	2.8	2,480±17%	2.7	—	—	—	—
Parkerview	39	1,678	—	—	—	—	—	—	—	—	—	—	—	—
Parkman	34	1,865	—	—	—	—	—	—	—	—	—	—	—	—
Pleasantdale	42	2,949	2,149±17%	0.7	—	—	—	—	—	—	—	—	—	—
Porcupine Fringe	56	—	—	—	—	—	894±19%	0.6	—	—	—	—	—	—
Porcupine Forest[b]	56	3,318	—	—	—	—	3,125±18%	0.9	—	—	—	—	—	—
Sask. River (Leader)	11&14	855	—	—	—	—	—	—	—	—	—	—	—	—
Sask. River	13&14	4,994	—	—	—	—	—	—	—	—	—	—	—	—
Sonningdale	45	1,958	2,516±19%	1.3	—	—	—	—	—	—	—	—	—	—
Souris	31	3,149	—	—	—	—	—	—	—	—	—	—	—	—
Thickwood Hills West	54	1,492	—	—	1,985±19%	1.3	—	—	—	—	—	—	—	—
Touchwood	33		—	—	—	—	—	—	—	—	—	—	—	—
Val Marie	2	1,119	—	—	—	—	—	—	—	—	—	—	—	—
Wroxton	37	1,176	—	—	—	—	—	—	—	—	—	—	—	—
Yorkton	39	3,107	—	—	—	—	—	—	—	—	—	—	—	—

[a] Confidence intervals on the population estimate.

[b] Quadrat surveys designed primarily for moose census.

[c] Quadrat surveys designed primarily for elk census.

Table 2. Provincial white-tailed deer population structure based on pre-season (CDMS) field observations, September to November, 1995-98.

	Bucks : Doe[a]				Fawns : Doe				Sample Sizes			
Ecozone	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998
Grassland	0.26	0.29	0.29	0.37	0.79	0.72	0.82	0.84	3,291	2,170	1,965	1,989
Farmland	0.47	0.45	0.44	0.41	0.97	0.94	0.90	0.82	6,069	3,275	2,364	4,182
Parkland	0.48	0.44	0.45	0.41	1.21	0.96	0.94	1.00	8,582	6,724	4,189	6,083
Forest Fringe	0.39	0.56	0.50	0.40	1.04	0.99	1.00	1.00	2,990	1,888	1,129	2,756
Forest	0.35	0.44	0.76	0.38	0.77	0.77	0.74	1.03	1,094	1,102	367	1,824
All Zones	0.42	0.43	0.43	0.40	1.02	0.90	0.90	0.94	22,026	15,159	10,014	16,834

[a] Bucks:Doe = (yearling bucks + mature bucks + unclassified bucks) / total does.

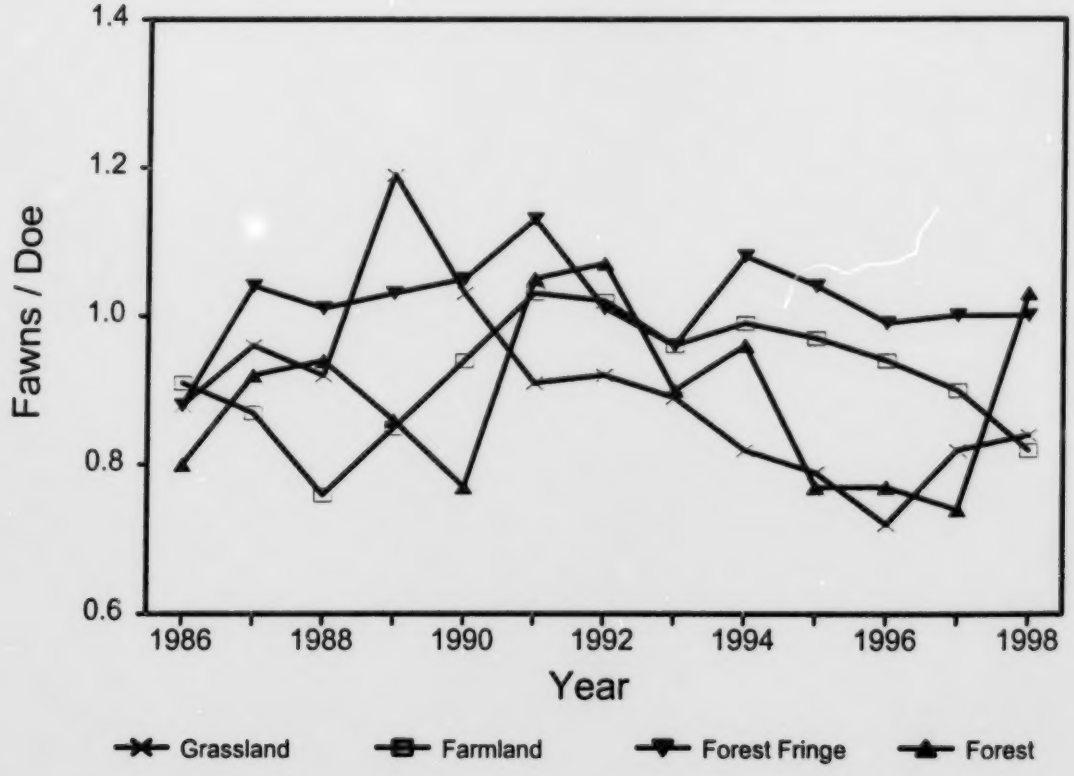

Figure 1. White-tailed deer fawn production in various Saskatchewan ecozones based on pre-season (CDMS) field observations, September to November, 1986-98.

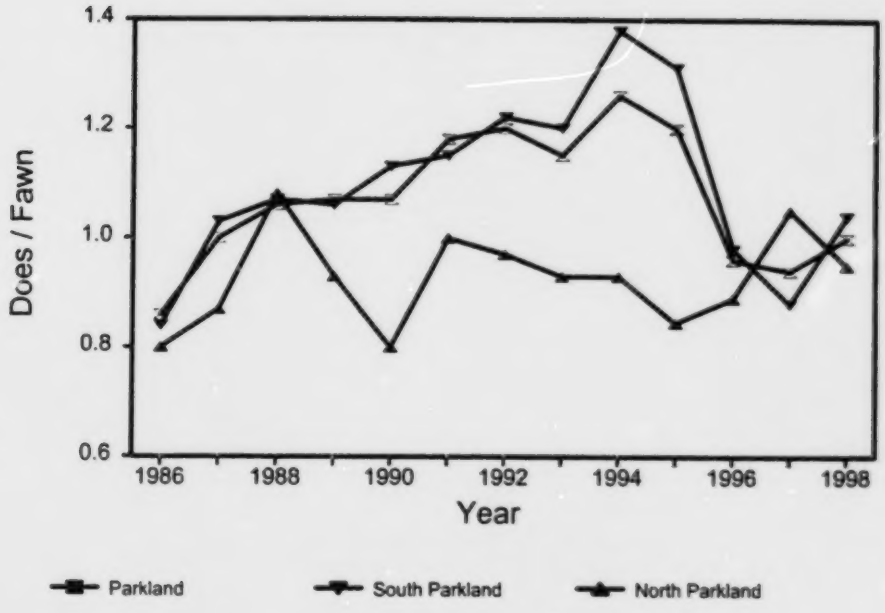

Figure 2 White-tailed deer fawn production in the Parkland ecozone based on pre-season (CDMS) field observations, September to November, 1986-98.

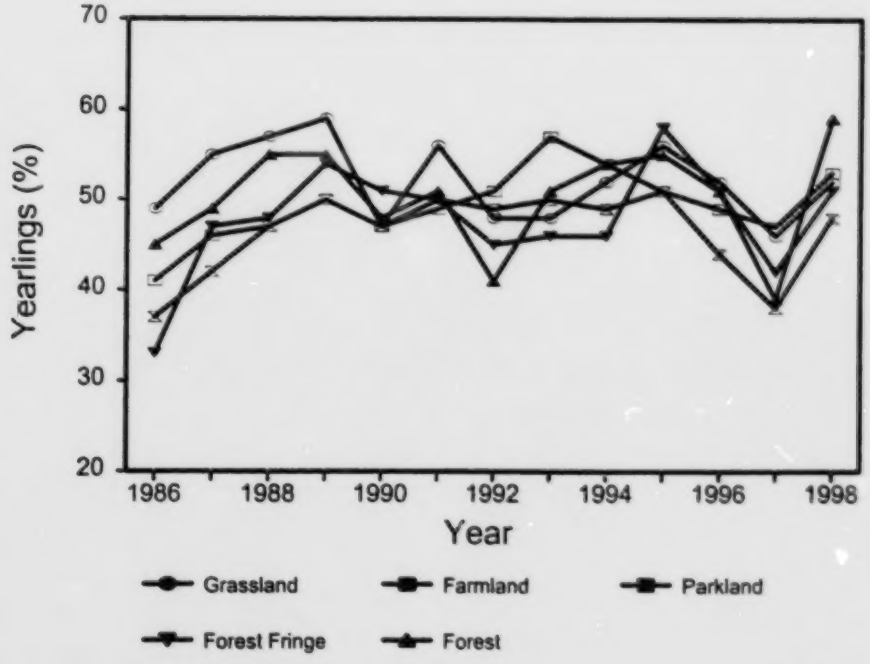

Figure 3. Yearling to mature buck ratios in various Saskatchewan ecozones based on pre-season (CDMS) observations, September to November, 1986-98.

1.35 fawns/doe (Appendix 1) for an average of 1.00 fawns/doe. Five WMZs had more than 300 observations compared to 1 in 1997. The Forest ecozone averaged 1.03 fawns/doe. Two WMZ's had >300 observations compared to none in 1997.

2.3 Biological Data Collection

2.3.1 Age Structure of Harvested Animals

Jaw and tooth sample collections were continued in 1998 to monitor ages of bucks harvested in the Forest ecozone. A total of 1,813 bucks were aged from samples collected from resident (n = 82) and non-resident (n = 1,731) hunters. The number of bucks harvested in the forest zones (WMZ 56-69) using an either-sex licence by resident hunters (2,026 bucks) was similar to the non-resident harvest (2,417 bucks). The proportion of bucks $\geq$ 3.5 years old harvested with an either-sex licence by resident hunters (65.9%) was less to that harvested by non-residents (85.6%). Figure 4 presents the age class distribution of the either-sex buck harvest. Note that since the sample size for resident hunters was small, Figure 4 should be interpreted with caution when comparing Saskatchewan to non-resident buck harvest.

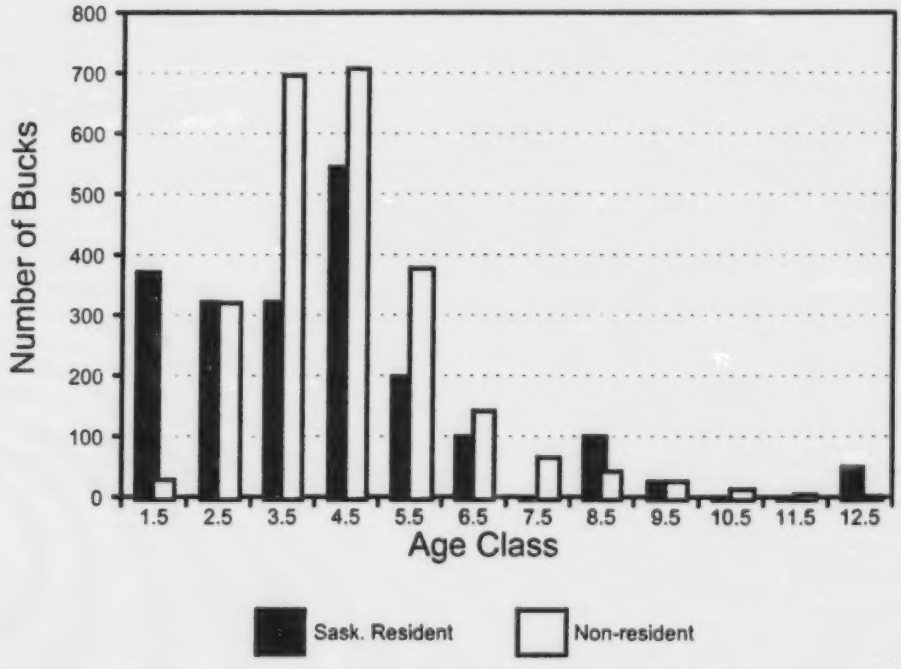

Figure 4. Number of white-tailed deer bucks harvested by age class in WMZs 56-69, 1998.

2.4 Mortality

2.4.1 Review of the 1998 Hunting Season

2.4.1.1 Licence Sales

White-tailed deer licences accounted for 68.9% (67,638) of the 98,102 big game licences sold in the province in 1998. Licence sales increased for all residency categories compared to 1997 but were still 5% below sales in 1995 (Table 3, Figure 5). Lower sales in 1996 and 1997 compared to years previous are the result of the elimination of the second either-sex licence in the Forest ecozone, negative reaction to the introduction of the Big Game Damage Fund Licence, and application of subsistence hunting rights to Metis. Increased licence sales in 1998 are due to the elimination of the Big Game Damage Fund Licence, changes in the status of hunting rights for Metis and increased interest by non-residents of Saskatchewan. Since 1989 Canadian resident licence sales have increased 151% and non-resident of Canada licence sales have increased 353%.

Non-trophy licence sales decreased, (Table 3, Figure 6) due to the reduction in the number of zones open to first non-trophy hunting opportunities and the elimination of second non-trophy hunting opportunities in all zones except Prince Albert WMZ.

Table 3. Provincial white-tailed deer licence sales, 1995 - 98.

Season	1995	1996	1997	1998[a]	% Change from 1997
1st Either-sex					
Resident	43,075	34,207	36,371	41,229	+13.4
Canadian Resident	1,424	1,423	1,827	2,159	+18.2
Non-resident	3,092	3,034	3,190	3,564	+11.7
2nd Either-sex					
Resident	6,182	0	0	0	—
Canadian Resident	149	0	0	0	—
Non-Resident	1,326	0	0	0	—
Non-trophy					
Resident	16,252	21,737	21,891	20,686	-5.5
Total	71,500	60,401	63,279	67,638	+6.9

[a] All licence sales represent sale figures as of March 31, 1999.

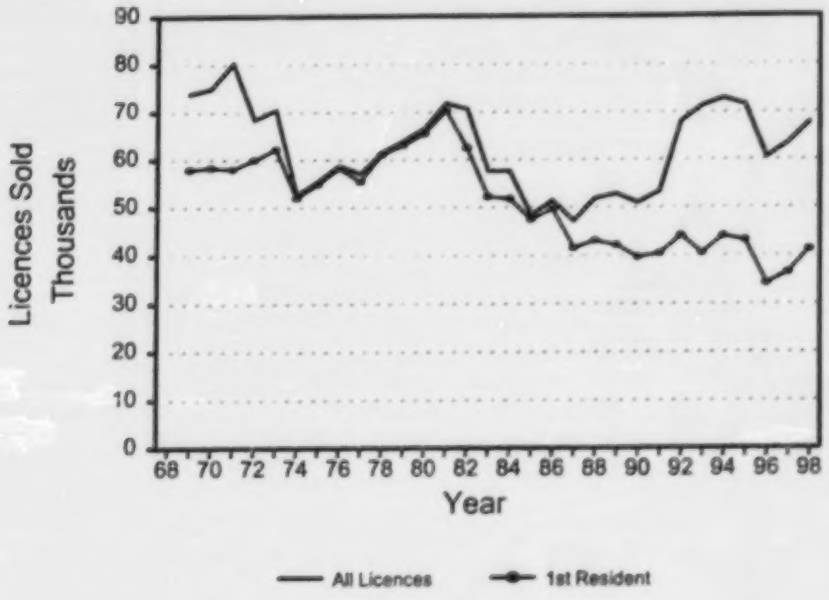

Figure 5. Provincial white-tailed deer licence sales, 1969 - 98.

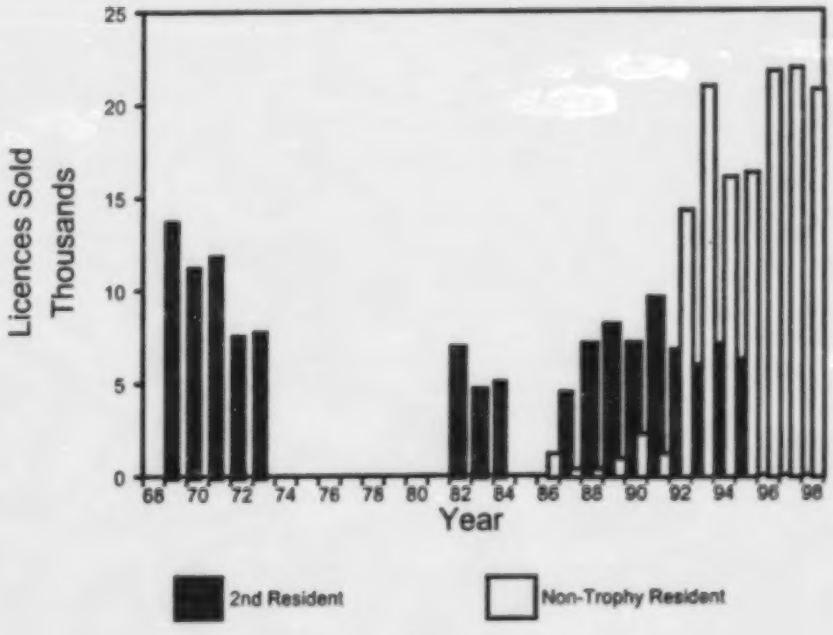

Figure 6. Second either-sex and non-trophy licence sales, 1969 - 98.

2.4.1.2 Hunting Activity and Harvest

The Hunter Harvest Survey (General Appendix 2) is the primary source of regulated hunting activity and harvest information. The 1998 Hunter Harvest Survey followed the format established in 1992; hunters were asked to report activity by licence type only, and therefore it is not possible to separate harvest or hunting activity by archers or muzzleloaders or by kill date. It is assumed that this group of hunters accounted for <5% of the provincial harvest. The one-licence system introduced in 1987 continued to be popular with hunters. Hunting activity and harvest data were again collected for Canadian residents and non-residents of Canada. There were insufficient surveys returned from these two categories that reported big game hunting activity. As a result, outfitter records were used to develop a profile of non-resident white-tailed deer hunting activity and a special questionnaire specific for white-tailed deer hunters was sent to 1,500 Canadian resident deer hunters.

There were 61,097 active resident hunters who spent 310,539 days afield (Table 4) compared to 57,114 hunters and 305,399 days in 1997. Resident white-tailed deer harvest from all weapon types increased from 42,381 deer in 1997 to 49,615 deer in 1998 (Table 4). Hunter success was 81% (Table 4), an increase from 74% in 1997. Hunter-days/animal decreased to 6.3 in 1998 (Table 4) compared to 7.2 in 1997.

Table 4. Provincial resident white-tailed deer harvest[a], 1998.

Ecozone	# Actual Hunters	# Zone Hunters	% Hunter Success	Harvest	Harvest Structure Bucks : Does : Fawns	Hunter-days	Hunter-days/ Animal
Grassland	4,431	5,719	80	3,550	2.34:1:0.21	16,154	4.6
Farmland	18,180	23,330	76	13,788	1.70:1:0.30	82,059	6.0
Parkland	25,561	31,575	82	21,062	1.85:1: 0.33	128,450	6.1
Forest Fringe	9,684	13,104	88	8,542	1.29:1:0.37	57,032	6.7
Forest	3,241	6,088	82	2,673	3.93:1:0.21	26,844	10.0
Total	61,097	79,816	81	49,615	1.80:1:0.32	310,539	6.3

[a] Includes first and second either-sex and non-trophy harvest.

Non-residents of Canada spent a total of 14,195 days hunting and harvested 2,771 deer (5.1 days/animal) for a success rate of 76%. Canadian residents spent a total of 11,247 days hunting and harvested 1,504 deer (7.5 days /animal) for a success rate of 67%.

When compared to 1997, total resident harvest in 1998 decreased in the Grassland (32%) ecozone but increased in the Farmland (10%), Parkland (14%), Forest Fringe (58%) and Forest (68%) ecozones. Provincially, the either-sex and non-trophy licences accounted for 69% (34,210) and 31% (15,405) of the harvest, respectively, in 1998, compared to 66% and 34% in 1997. When harvest by residents, Canadian residents and non-residents are combined, 53,890 white-tailed deer were harvested in Saskatchewan in 1998 second only to the record harvest of 55,282 in 1995 which did not include an estimate of harvest by Canadian residents.

Saskatchewan resident hunting activity and harvest by WMZ for either-sex, 1st non-trophy and 2nd non-

trophy hunting seasons are presented in Appendix 2, 3, and 4, respectively.

The **Grassland** ecozone resident either-sex harvest increased slightly in 1998 but was considerably below the 10-year average (Figure 7, Table 5). A 32% decline in total harvest compared to 1997 was due primarily to reduced non-trophy harvest.

The **Farmland** ecozone resident either-sex harvest increased over 1997(Figure 7, Table 5). It was above the 10-year average (Table 5) and just slightly below the 1978-84 average harvest of >9,500.

The **Parkland** ecozone resident either-sex harvest was 23% higher than in 1997 and higher than the 10-year average. In addition, 6,804 non-trophy deer were harvested on the first non-trophy licence in the Parkland ecozone (Table 6), which is 13% more than in 1997 (6,010 deer). In spite of the elimination of the second non-trophy season, ecozone total harvest was 21,062 in 1998, only 4% below the record harvest of 21,918 in 1995, significantly higher than harvests prior to the introduction of non-trophy seasons in 1992 (Figure 7).

Figure 7. Southern Saskatchewan resident white-tailed deer harvest, 1986 - 98.

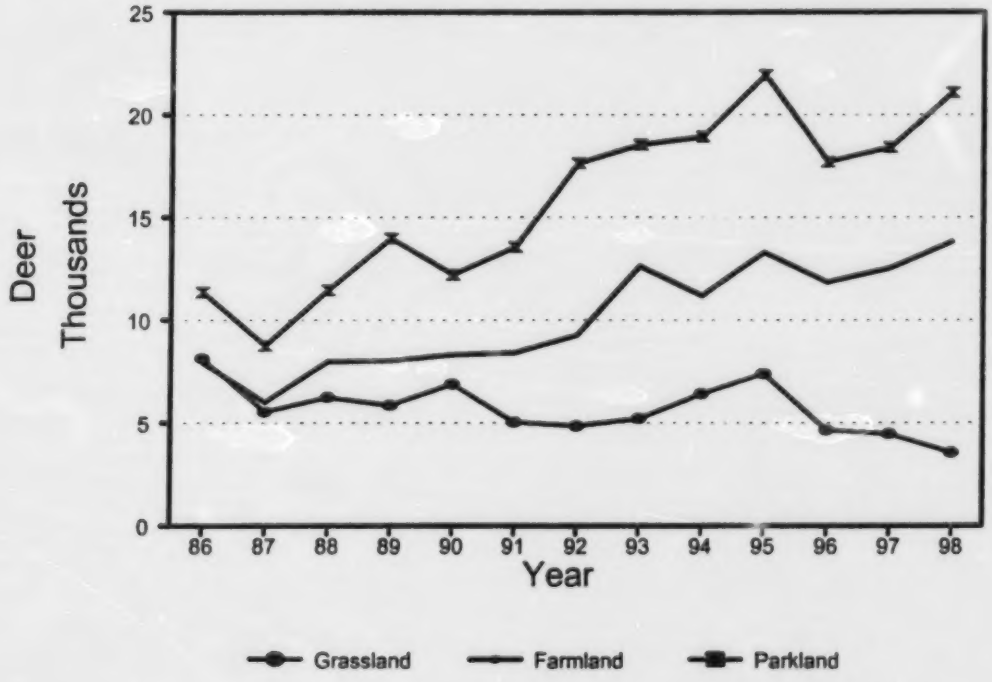

Table 5. Resident either-sex white-tailed deer rifle harvest by ecozone, 1998 [a].

Ecozone	Year	# Actual Hunters	# Zone Hunters	Harvest	Hunter Success (%)	Harvest Structure Bucks:Does:Fawns	Hunter-days	Hunter-days/ Animal
Grassland	1998	3,659	4,921	2,934	80	4.71:1.00:0.19	14,384	4.9
	1997	3,742	4,882	2,865	77	6.94:1.00:0.23	13,704	4.8
	10-yr avg.	5,195	6,595	4,268	82	5.59:1.00:0.22	16,605	3.9
Farmland	1998	11,845	16,908	9,345	79	6.28:1.00:0.22	59,184	6.3
	1997	10,351	14,794	7,985	77	7.05:1.00:0.24	58,078	7.3
	10-yr avg.	10,021	13,820	8,178	82	4.64:1.00:0.25	42,642	5.2
Parkland	1998	16,458	22,246	14,258	87	7.66:1.00:0.25	93,000	6.5
	1997	14,856	19,866	11,632	78	9.27:1.00:0.36	88,256	7.6
	10-yr avg.	15,319	19,818	12,415	81	5.46:1.00:0.34	72,372	5.8
Forest Fringe	1998	5,110	8,407	5,000	98	6.40:1.00:0.33	38,949	7.8
	1997	4,371	7,327	3,663	84	6.66:1.00:0.21	35,589	9.7
	10-yr avg.	3,894	6,215	3,428	88	4.12:1.00:0.36	24,768	7.2
Forest 1st Licence	1998	3,241	6,088	2,673	82	3.92:1.00:0.21	26,844	10.0
	1997	2,452	5,265	1,587	65	5.65:1.00:0.19	24,159	15.2
	10-yr avg.	3,409	6,324	2,524	74	2.94:1.00:0.26	25,169	10.0
Forest 2nd Licence	1998	—	—	—	—	—	—	—
	1997	—	—	—	—	—	—	—
	10-yr avg.	4,428	4,648	2,894	65	1.84:1.00:0.28	17,167	5.9
Provincial Total	1998	40,313	58,570	34,210	85	6.34:1.00:0.24	232,361	6.8
	1997	35,772	52,134	27,732	78	7.65:1.00:0.27	219,786	7.9
	10-yr avg.	42,150	57,377	33,745	80	3.94:1.00:0.32	190,803	5.7

The **Forest Fringe** ecozone resident either-sex harvest increased 37% over 1997. Harvest of non-trophy deer increased to 3,542 in 1998 (Table 6) compared to 1,736 in 1997 and 2,156 in 1996. Higher total harvests since 1995 (Figure 8) are due to increased availability of non-trophy licences and changes to WMZ boundaries which significantly increased the area of some Forest Fringe WMZs.

The **Forest** ecozone resident either-sex harvest increased compared to 1997(Table 5). Total harvest since 1995 is significantly lower than the late 1980's or early 1990's. Elimination of the second either-sex licence, increased non-trophy hunting opportunities in the northern Parkland and all Forest Fringe zones and changes to WMZ boundaries have shifted hunting pressure away from this ecozone. Non-trophy licences were not available in the Forest ecozone.

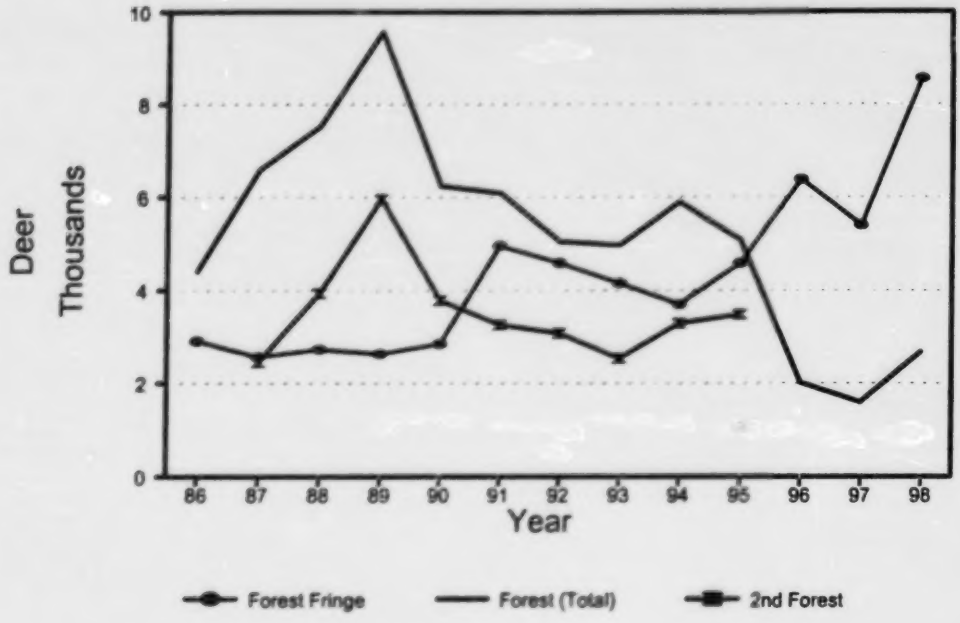

Figure 8. Northern Saskatchewan resident white-tailed deer harvest, 1986 - 98.

Table 6. Resident non-trophy white-tailed deer rifle harvest by ecozone, 1998.

Ecozone/ Licence type	# Actual Hunters	# Zone Hunters	Harvest	Hunter Success (%)	Harvest Structure Bucks:Does:Fawns	Hunter-days	Hunter-days/ Animal
Grassland							
1st Non-trophy	772	798	616	80	0.00:1.00:0.22	1,770	2.9
2nd Non-trophy	—	—	—	—	—	—	—
Farmland							
1st Non-trophy	6,335	6,422	4,443	70	0.00:1.00:0.33	22,875	5.1
2nd Non-trophy	—	—	—	—	—	—	—
Parkland							
1st Non-trophy	9,103	9,329	6,804	75	0.00:1.00:0.36	35,450	5.2
2nd Non-trophy	—	—	—	—	—	—	—
Forest Fringe							
1st Non-trophy	4,573	4,695	3,541	77	0.00:1.00:0.38	18,068	5.1
2nd Non-trophy	1	2	1	100	0.00:1*:1.00	15	15.0
Provincial Total							
1st Non-trophy	20,783	21,244	15,404	74	0.00:1.00:0.35	78,163	5.1
2nd Non-trophy	1	2	1	100	0.00:1*:1.00	15	15.0

2.4.1.3 Harvest Structure

The resident provincial either-sex harvest structure has had an elevated buck:doe ratio for the last 3 years (Table 7). The higher buck:doe harvest ratio could be a result of: 1) the high white-tailed deer populations throughout the province resulting in hunters being more selective for bucks; 2) earlier opening dates resulting in the bucks being more vulnerable during the peak of the rut; and 3) the expanded non-trophy hunting opportunities which allowed hunters to be more selective with the either-sex licence.

Table 7. Provincial white-tailed deer harvest structure of the resident either-sex rifle season, 1995 - 98[a].

	1995 Harvest Ratio Bucks : Does : Fawns	1996 Harvest Ratio Bucks : Does : Fawns	1997 Harvest Ratio Bucks : Does : Fawns	1998 Harvest Ratio Bucks : Does : Fawns
Grassland	5.89:1:0.19	7.39:1:0.19	6.94:1:0.23	4.71:1:0.19
Farmland	5.15:1:0.18	5.98:1:0.17	7.05:1:0.24	6.28:1:0.22
Parkland	5.97:1:0.37	9.45:1:0.34	9.27:1:0.36	7.66:1:0.25
Forest Fringe	3.18:1:0.39	6.98:1:0.26	6.66:1:0.21	6.40:1:0.33
Forest[a]	2.76:1:0.22	3.87:1:0.17	5.56:1:0.19	3.92:1:0.21
Provincial Total	5.03:1:0.29	7.07:1:0.23	7.65:1:0.27	6.34:1:0.24

[a] First either-sex rifle season harvest only.

The **Grassland ecozone** either-sex harvest ratio declined in 1998 (Table 7); similar to the ratios recorded in the late 1980's (Figure 9) prior to the introduction of non-trophy seasons. The buck:doe harvest ratio decreased in the **Farmland ecozone** in 1998 but is still the second highest since 1988 (Table 7, Figure 9). In the **Parkland ecozone** the bucks:doe ratio declined but is still the third highest since 1988 (Table 7, Figure 9) and is significantly higher than the 10-year average (Table 5). Hunter selection for bucks in **Forest Fringe** zones declined slightly (Figure 10, Table 5). The **Forest ecozone** first either-sex harvest ratio was down compared to 1997 but was the second highest compared to any other year since 1988 (Table 7, Figure 10). Although resident hunters are harvesting fewer deer in total in the Forest ecozone (Figure 8) they are selecting for a higher ratio of bucks in the harvest since the elimination of the second either-sex licence in 1996.

Allowing hunters more choice regarding selection of the deer they harvest (i.e. non-trophy and/or either-sex licences) continued to place pressure on the buck component of the 1998 harvest in all ecozones except the Grassland. A comparison of the total harvest and buck harvest between 1991 (when non-trophy seasons were limited to a few Grassland WMZs) to harvests in 1998 (when non-trophy seasons continued to be liberal) indicated that buck harvest continued to increase at a faster rate (+30%) compared to total harvest (-10%) (Table 8). Continued monitoring of the harvest is essential to evaluate herd structure and implications of harvest strategies. It is clear that additional pressure on bucks results from hunter selection due to licence options rather than hunters just being more selective in years when deer populations are high.

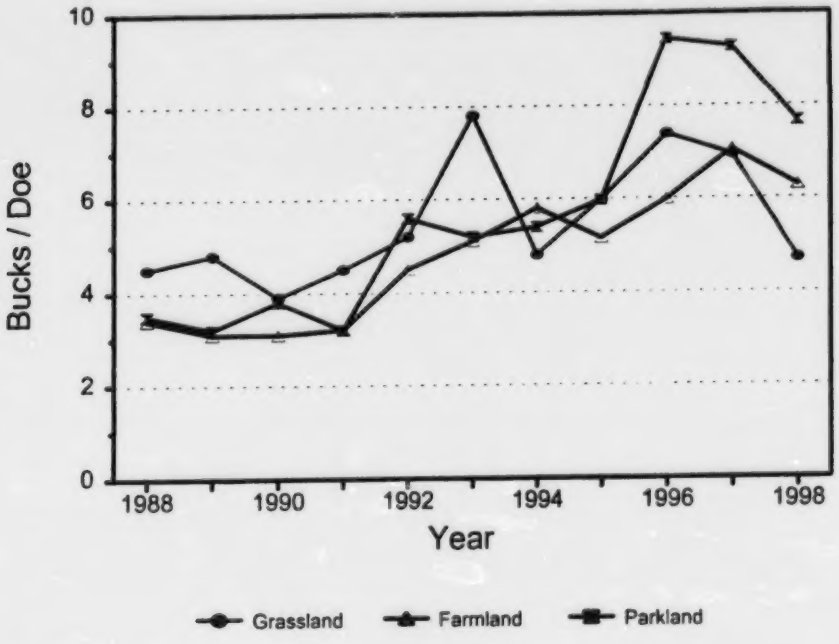

Figure 9. Southern Saskatchewan white-tailed deer buck/doe harvest, 1988 - 98.

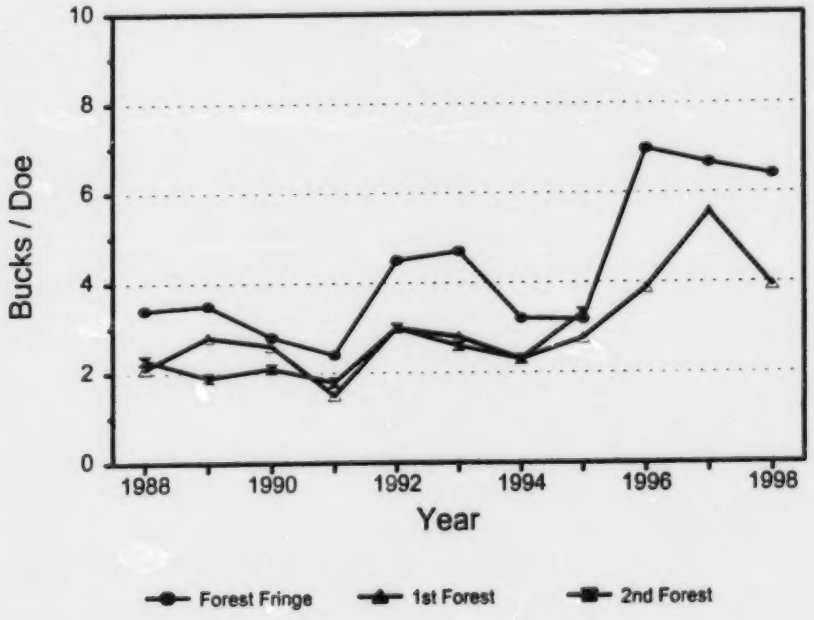

Figure 10. Northern Saskatchewan white-tailed deer buck/doe harvest, 1988 - 98.

Table 8. Comparison of total white-tailed deer harvest and buck harvest between 1991 and 1998[a].

Ecozone	1991 Total Harvest	1998 Total Harvest	% Change	1991 Buck Harvest	1998 Buck Harvest	% Change
Grassland	4,437	2,934	-34	3,546	2,342	-34
Farmland	8,160	9,345	+14	5,844	7,831	+34
Parkland	12,898	14,258	+11	9,071	12,263	+35
Forest Fringe	3,070	5,000	+63	1,955	4,140	+112
Total	28,565	31,537	+10	20,416	26,576	+30

[a] Resident first either-sex rifle season only.

When harvests from all licence options are combined (Table 4), a different picture of harvest structure is presented. The net result of non-trophy seasons is that while more bucks are harvested on the either-sex licences (Table 7), particularly in the Grassland, Farmland, Parkland and Forest Fringe ecozones, the removal of non-trophy animals balances the harvest structure (Table 4) and should facilitate a balanced sex ratio in the remaining population.

2.4.1.4 Buck Harvest

Collection of antler class information by the Hunter Harvest Survey (General Appendix 2)and outfitter records resulted in good sample sizes for resident and non-resident hunters in 1998 (Tables 9 and 10). The sample from Canadian residents was obtained from a separate survey.

The proportion of yearling bucks (antler classes A to C) harvested by resident hunters increased in 1998 (30%) compared to 1997 (22%). In contrast the proportion of yearlings was 33% in 1995. The proportion of teenage bucks (antler class D) and of mature bucks (antler classes E and F) was slightly lower in all ecozones in 1998 compared to 1997.

Antler class information from non-resident hunters was consistent with trends observed in buck harvest from 1992-95. Non-residents harvested a lower proportion of yearlings and larger proportion of teenage and mature bucks (Table 10) than resident hunters (Table 9).

Canadian residents harvested similar proportions of yearling bucks in 1997 and 1998 (Table 11). They harvested proportionately fewer yearlings than residents and proportionately more yearlings than non-residents.

Table 9. Resident white-tailed deer buck harvest by antler class, based on the Hunter Harvest Survey, 1997 and 1998.

Ecozone	1997 % Bucks in Antler Class A	B	C	D	E & F	Sample Size	1998 % Bucks in Antler Class A	B	C	D	E & F	Sample Size
Grassland	2	6	12	41	39	405	3	12	17	40	28	272
Farmland	3	7	12	40	37	1,158	2	11	19	35	33	924
Parkland	3	8	8	38	42	1,705	4	11	13	32	40	1446
Forest Fringe	6	11	10	36	37	521	5	13	14	29	39	480
Forest 1[a]	4	14	12	36	33	212	4	12	12	33	39	241
Forest 2[a]	—	—	—	—	—	—	—	—	—	—	—	—
Total	4	8	10	39	39	4,001	4	11	15	33	37	3363

[a] 1st and 2nd either-sex white-tailed deer licences. Percentages and sample sizes exclude bucks with unknown antler class.

Table 10. Non-resident white-tailed deer buck harvest by antler class, based on outfitter records, 1997 and 1998.

Ecozone	1997 % Bucks in Antler Class A	B	C	D	E & F	Sample Size	1998 % Bucks in Antler Class A	B	C	D	E & F	Sample Size
Forest Fringe	0	1	7	47	45	211	0	1	4	32	63	234
Forest 1[a]	<1	1	7	34	58	2,165	<1	1	5	35	59	2,460
Forest 2[a]	—	—	—	—	—	—	—	—	—	—	—	—
Total	<1	1	7	35	57	2,376	<1	1	5	34	60	2,694

[a] 1st and 2nd either-sex white-tailed deer licences.

Table 11. Canadian resident white-tailed deer buck harvest by antler class, based on a special mail survey, 1997 and 1998.

Ecozone	1997 % Bucks in Antler Class A	B	C	D	E & F	Sample Size	1998 % Bucks in Antler Class A	B	C	D	E & F	Sample Size
Grassland	1	1	8	60	30	77	0	4	9	45	42	55
Farmland	0	4	10	62	25	52	3	7	9	41	40	70
Parkland	2	3	6	42	45	154	2	3	5	40	49	174
Forest Fringe	0	5	8	37	50	62	5	13	10	29	42	78
Forest	7	3	13	50	27	30	7	3	15	33	41	27
Total	2	3	8	49	39	375	3	6	8	38	45	404

2.4.2 Subsistence Harvest

There is no data on subsistence harvest.

2.4.3 Depredation Hunts

In-season Depredation Licences were again offered to landowners to address local and/or chronic depredation concerns. A total of 560 licences were available of which 530 were issued to hunters in WMZs 14, 15, 31, 32 and 37. This is a 31% decrease over the number issued in 1997 (771) and a significant decrease from the 1,645 issued in 1995. Overall hunter success on the depredation licences was 85% compared to 82% in 1997, 67% in 1996 and 75% in 1995.

2.4.4 Impact of Weather Severity

In contrast to 1995/96 and 1996/97 the winter of 1997/98 was one of the mildest winters on record due to the influence of El Nino. The winter of 1998/99 was also relatively mild with below average snowfall throughout the province except in portions of south central and the extreme southeast corner. Harsh winter conditions in 1995-96 and 1996/97 reduced fawn production especially in southeastern Saskatchewan (hardest hit were WMZ's 33 and 34 where production in 1996 and 1997 was less than half the production in 1995. Reduced productivity in 1997 was also documented in WMZ's 35, 39 and 40. In 1998 productivity recovered in WMZ's 35, 39 and 40 but remained depressed in WMZ's 33 and 34.

3.0 Management Objectives and Strategies

In response to healthy populations in the southern and eastern portions of the province and stabilized populations in other areas, the 1999 white-tailed deer season was based on the following objectives:

- Take advantage of healthy populations and resolve landowner and public concerns about increasing deer numbers in agricultural areas.
- Continue the strategy of utilizing non-trophy deer licences to stabilize or reduce deer densities in zones south of the forest.
- Continue the season structure in the Forest ecozone (1 either-sex licence) to reflect concerns of excessive pressure on mature bucks. Introduce an antlerless season in the Forest ecozone to give additional hunting opportunity to resident hunters and to provide a more balanced sex ratio in the total harvest.

3.1 Southern Management Strategies

- The archery and muzzleloader seasons in southern Saskatchewan were adjusted to open August 30 (except for some provincial parks) and September 27 respectively, and closed on Saturday, October 30.
- The bag limit of one either-sex and one non-trophy deer (separate licences) in most Parkland, most Farmland and a few Grassland zones enabled hunters to take advantage of stable populations and to provide additional hunting opportunity.
- The three week rifle season was retained and opened on November 15 and closed on December 4, in all Grassland, Farmland and southern Parkland zones.
- First non-trophy licences were eliminated from WMZ's 1, 4, 17, 19, 21, 22, 33, 34 and 42 due to concerns about potential over-harvest.
- Second non-trophy licences were eliminated from all WMZ's except Prince Albert WMZ in 1998 due to concerns about the residual impact of the winters of 1995/96 and 1996/97 and potential over-harvest. A second non-trophy licence valid only in Forest zones was made available to Saskatchewan residents to encourage a more balanced harvest and to restore some hunting opportunity lost after the second either-sex licence was eliminated in 1996 due to concerns about over-harvest of mature bucks.
- Canadian resident hunters were prohibited from hunting in WMZ's 16, 17, 31 to 35 and 37 to 39 following the severe 1984-85 winter. Regulations were changed to allow Canadian residents back into these zones in 1996. For 1999 the either-sex season for Canadian residents was November 22 to December 4 in the southeast, November 15 to December 4 in the north and November 29 to December 4 in the southwest. Canadian residents are also eligible to hunt non-trophy white-tailed deer in those WMZs with a non-trophy season.
- The early opening date (November 1) in WMZs 42, 43 and 47 to 55 continued to give northern Parkland hunters the opportunity to hunt during warmer weather conditions.

3.2 Northern Management Strategies

- The archery and muzzleloader seasons, with a one deer either-sex bag limit opened on August 23 and September 6, respectively. Archery, muzzleloader and rifle seasons in far northern zones overlap and ran from August 23 to December 4.
- The early and late rifle season structure, with a one deer either-sex bag limit was retained in WMZs 56 to 66 and 69. Season dates and bag limits are similar for resident, Canadian and non-residents of Canada hunters in these zones. A late season hunt only, with a one deer either-sex bag limit continued in WMZs 67 and 68. The one deer either-sex season that overlapped with moose was retained in WMZs 70 to 76.
- Persons possessing a draw moose or elk licence, including archery and muzzleloader hunters, for the northern zones were again able to hunt white-tailed deer during their respective season dates but only in the zone in which they held their draw licence. Regular elk and moose hunters were able to hunt white-tailed deer at the same time but only in Forest Wildlife Management Zones.

4.0 Appendix

Appendix 1. White-tailed deer population structure based on CDMS pre-season field observations, September to November, 1995-98.

Ecozone and WMZ	Bucks : Doe [a]				Fawns : Doe				Sample Sizes			
	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998
Grassland												
1	0.29	0.34	0.26	0.33	0.40	0.44	0.62	0.48	420	301	379	98
2	0.40	0.33	0.33	0.58	0.85	0.60	0.77	0.63	291	93	145	172
3	0.38	0.35	2.50	0.00	1.55	0.51	1.00	2.00	85	138	18	9
4	0.13	0.13	0.18	0.27	1.02	0.96	0.93	1.00	932	602	661	485
5	0.47	0.40	0.33	0.40	0.97	0.59	0.83	1.03	193	237	281	153
6	0.36	0.67	0.60	0.44	0.71	0.73	1.08	0.71	359	218	142	228
7	0.17	0.27	0.29	0.41	0.66	0.65	0.67	0.88	117	222	222	146
8	0.13	—	0.00	0.31	0.71	—	1.00	0.69	237	0	2	64
9	0.29	0.30	1.50	0.65	0.84	1.04	0.75	0.92	117	54	26	67
10	0.50	0.44	0.35	0.38	0.86	1.44	0.94	1.00	66	46	39	69
11	0.07	0.00	—	0.56	0.76	1.33	—	1.44	53	7	0	27
12	0.83	0.00	0.17	0.23	0.50	1.50	0.83	0.54	14	5	12	23
13	0.25	0.17	0.43	0.25	0.89	0.70	1.23	0.82	269	165	80	294
14	0.49	0.05	0.17	0.44	0.70	0.86	0.59	0.76	138	82	72	154
Total	0.26	0.29	0.29	0.37	0.80	0.72	0.82	0.84	3,291	2,170	1,965	1985
Farmland												
15	0.52	0.52	0.31	0.45	1.10	1.04	0.94	0.79	345	345	189	455
16	0.56	0.63	0.31	0.53	1.35	0.98	1.27	1.00	297	229	193	152
17	0.34	0.39	0.65	0.30	1.18	0.97	0.81	1.12	430	412	236	383
18	0.49	0.66	0.71	0.32	0.89	1.05	0.96	0.78	584	258	195	86
19	0.38	0.24	0.54	0.34	0.84	0.59	0.52	0.72	558	106	142	232
20	0.65	0.44	0.72	0.40	1.05	0.92	0.82	0.78	835	345	155	385
21	0.36	0.34	0.25	0.34	1.26	0.97	1.24	1.08	968	643	373	638
22	0.60	0.27	0.33	0.58	1.00	1.05	1.89	1.31	26	51	29	234
23	0.43	0.76	0.63	0.42	0.76	0.78	0.63	0.95	304	203	97	440
24	0.78	0.43	0.33	0.28	0.50	0.58	0.80	0.48	419	153	183	373
25	0.36	0.45	0.37	0.34	0.45	0.98	0.73	0.34	101	124	124	210
26	0.58	0.55	0.30	0.52	0.96	0.09	0.66	0.62	66	18	119	194
27	0.30	0.13	0.30	0.37	0.52	1.27	0.85	0.70	91	36	131	62
28	0.26	0.80	—	0.25	0.60	0.87	—	1.50	277	40	0	11
29	0.53	0.39	0.86	0.94	0.92	1.22	0.14	0.72	189	188	28	125
30	0.53	0.41	0.57	0.60	1.17	0.89	0.90	0.72	579	124	170	202
Total	0.48	0.45	0.44	0.41	0.96	0.96	0.90	0.82	6,069	3,275	2,364	4182

[a] Bucks:Doe = (yearling bucks + mature bucks + unclassified bucks) / total does.

Appendix 1 (continued).

Ecozone and WMZ	Bucks : Doe [a]				Fawns : Doe				Sample Sizes			
	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998
Parkland												
31	0.39	0.44	0.54	0.25	1.55	1.44	0.58	1.75	91	52	51	48
32	0.33	0.47	0.89	0.67	1.27	1.25	0.33	1.11	117	185	20	25
33	0.27	0.58	0.35	0.49	1.34	0.58	0.66	0.69	808	386	189	292
34	0.44	0.38	0.49	0.32	1.36	0.64	0.74	0.81	1,085	674	333	265
35	0.57	0.45	0.55	0.41	1.53	1.07	0.54	1.01	1,692	802	352	441
36	0.51	0.47	0.43	O.35	1.01	1.01	0.74	0.90	217	336	100	489
37	0.37	0.43	0.38	0.39	1.21	1.16	1.20	1.24	1,535	1,557	982	1403
38	0.58	0.44	0.54	0.54	1.02	0.80	1.17	1.10	494	390	195	161
39	0.63	0.49	0.53	0.52	1.27	1.19	0.76	1.01	715	582	429	513
40	0.80	0.39	0.38	0.53	0.75	0.74	0.71	0.89	347	257	368	394
41	1.06	0.86	0.49	0.49	1.05	0.70	1.19	1.04	193	161	266	316
42	0.42	0.41	0.45	0.31	0.79	0.68	0.87	0.80	390	159	195	433
43	0.32	0.38	0.38	0.41	0.84	0.87	1.13	0.92	147	200	100	271
44	0.15	0.40	0.20	0.44	0.83	1.00	0.90	0.81	103	12	21	241
45	0.41	0.38	0.42	0.44	1.16	1.34	1.50	1.30	297	605	482	414
46	0.25	0.37	0.71	0.14	0.50	0.58	0.67	0.87	21	239	57	225
47	0.53	0.42	0.39	0.44	0.71	0.73	0.74	0.94	330	127	49	152
Total	0.48	0.44	0.45	0.41	1.20	0.96	0.94	1.00	8,582	6,724	4,189	6,083
Forest Fringe												
48	0.42	0.48	0.59	0.41	0.99	0.97	1.20	1.04	713	591	608	687
49	0.25	0.45	0.23	0.38	1.01	0.77	0.71	0.32	566	285	151	475
50	0.52	0.72	0.32	0.35	0.84	0.87	1.00	0.87	244	466	130	395
51	0.50	0.40	0.54	0.44	0.92	2.35	0.71	0.82	92	206	54	185
52	0.87	0.37	0.50	0.23	1.20	1.16	1.50	0.96	46	48	12	57
53	0.72	0.57	1.11	0.51	1.07	0.77	0.94	0.85	151	103	55	139
54	0.36	0.82	0.50	0.47	1.13	0.83	0.70	1.04	759	188	119	446
55	0.40	—	—	0.33	1.11	—	—	1.35	419	1	0	372
Total	0.40	0.56	0.50	0.40	1.04	0.99	1.00	1.00	2,990	1,888	1,129	2,756

Appendix 1 (Continued).

Ecozone and WMZ	Bucks : Doe [a]				Fawns : Doe				Sample Sizes			
	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998
Forest												
56	0.30	0.44	0.61	0.33	1.01	0.94	0.97	1.14	254	331	98	454
57	0.16	0.36	0.50	0.45	0.59	0.68	0.50	1.09	119	45	20	28
58	—	—	0.33	0.56	—	0.50	0.33	1.33	3	3	5	26
59	0.27	0.32	1.19	0.46	1.02	0.57	0.81	0.69	110	230	78	246
60	0.79	0.13	0.00	0.16	1.00	1.19	1.00	0.74	39	37	4	36
61	—	—	—	0.00	1.33	—	—	1.00	7	1	0	4
62	0.25	0.63	0.00	1.50	1.25	0.50	2.00	3.00	10	17	3	11
63	0.33	0.83	0.59	0.54	0.61	1.05	0.29	1.23	89	118	32	72
64	0.53	0.66	1.00	0.55	1.73	0.74	0.78	1.16	49	163	25	168
65	1.00	0.20	—	—	—	0.40	—	—	4	16	0	0
66	0.33	0.29	0.67	0.22	0.76	0.96	0.42	0.81	88	63	25	148
67	0.44	2.00	—	0.47	0.60	3.00	—	1.35	173	12	1	138
68	0.67	0.21	0.68	0.50	0.62	0.37	0.91	0.93	48	60	57	34
69	0.69	1.50	1.14	0.32	0.59	—	0.57	1.08	89	5	19	444
70	1.00	—	—	—	2.00	—	—	—	8	—	—	—
71	—	—	—	—	—	—	—	—	—	—	—	—
72	—	—	—	—	—	—	—	—	—	1	—	—
73	1.00	—	—	0.38	—	—	—	0.50	4	—	—	15
Total	0.38	0.44	0.76	0.40	0.79	0.77	0.74	1.03	1,094	1,102	367	1,824

Appendix 2. Resident either-sex white-tailed deer harvest by ecozone and WMZ, 1998.

Ecozone and WMZ	# Actual Hunters	# Zone Hunters	Hunter Success (%)	Harvest	Harvest Structure Bucks:Does:Fawns	Hunter-days	Hunter-days/ Animal
Grassland							
1	381	513	85	323	11.33:1:1.33	1,309	4.1
2	264	355	78	205	5.00:1:0.50	1,128	5.5
3	65	87	72	47	2.00:1:0.00	323	6.9
4	557	749	100	560	5.27:1:0.18	2,673	4.8
5	405	544	86	347	3.89:1:0.00	1,569	4.5
6	305	410	67	205	4.20:1:0.00	1,096	5.3
7	111	150	71	79	9.00:1:0.00	308	3.9
8	82	110	67	55	6.00:1:0.00	371	6.7
9	264	355	78	205	2.57:1:0.14	923	4.5
10	211	284	86	181	1.88:1:0.00	670	3.7
11	129	174	91	118	6.50:1:0.00	442	3.7
12	35	47	46	16	15.771*:0.00	87	5.4
13	387	521	63	244	9.00:1:0.33	1,270	5.2
14	463	623	75	347	5.00:1:0.29	2,216	6.4
Total	3,659	4,922	80	2,932	4.71:1:0.19	14,385	4.9
Farmland							
15	569	812	100	591	5.64:1:0.18	2,224	3.8
16	569	812	91	520	5.50:1:0.10	1,972	3.8
17	1,188	1,696	80	946	7.14:1:0.43	4,874	5.2
18	652	931	85	552	4.58:1:0.25	2,468	4.5
19	751	1,073	80	599	5.25:1:0.08	2,713	4.5
20	867	1,238	66	576	8.00:1:0.13	6,790	11.8
21	1,475	2,106	89	1,309	6.67:1:0.24	8,556	6.5
22	669	954	79	528	8.29:1:0.29	3,099	5.9
23	641	915	66	426	49.00:1:4.00	2,957	6.9
24	431	615	88	379	8.40:1:0.20	2,106	5.6
25	425	607	84	355	4.00:1:0.00	1,546	4.4
26	204	292	81	166	6.00:1:0.00	733	4.4
27	315	450	70	221	5.75:1:0.25	1,293	5.9
28	265	379	60	158	3.00:1:0.00	1,009	6.4
29	967	1,380	72	694	3.05:1:0.14	4,621	6.7
30	1,503	2,145	75	1,128	12.90:1:0.40	8,966	7.9
Saskatoon	354	505	56	197	4.00:1:0.00	3,257	16.5
Total	11,845	16,910	79	9,345	6.28:1:0.22	59,184	6.3

Appendix 2. (Continued).

Ecozone and WMZ	# Actual Hunters	# Zone Hunters	Hunter Success (%)	Harvest	Harvest Structure Bucks:Does:Fawns	Hunter-days	Hunter-days/ Animal
Parkland							
31	455	615	95	434	4.89:1:0.22	1,822	4.2
32	508	686	99	505	30.00:1:1.00	1,806	3.6
33	572	773	83	473	5.67:1:0.00	2,303	4.9
34	992	1,341	91	907	9.18:1:0.27	5,008	5.5
35	823	1,112	100	836	8.36:1:0.27	3,998	4.8
36	799	1,080	77	615	11.67:1:0.33	3,557	5.8
37	2,404	3,249	100	2,642	9.19:1:0.28	14,928	5.7
38	642	868	77	497	5.20:1:0.10	3,178	6.4
39	974	1,317	99	962	9.17:1:0.00	5,749	6.0
40	618	836	83	513	9.50:1:0.33	3,564	6.9
41	1,249	1,688	78	970	4.62:1:0.24	6,679	6.9
42	1,365	1,845	70	954	6.31:1:0.25	10,189	10.7
43	793	1,073	73	576	15.75:1:1.50	4,692	8.1
44	688	931	79	544	6.56:1:0.11	3,959	7.3
45	1,581	2,137	86	1,356	5.76:1:0.12	8,517	6.3
46	712	962	73	520	8.14:1:0.29	4,487	8.6
47	1,284	1,735	74	954	7.92:1:0.38	8,564	9.0
Total	16,459	22,248	87	14,258	7.66:1:0.25	93,000	6.5
Forest Fringe							
48	834	1,372	89	741	5.85:1:0.38	6,403	8.6
49	719	1,183	95	686	6.73:1:0.18	5,134	7.5
50	571	938	100	576	8.86:1:0.57	3,580	6.2
51	163	268	92	150	18.00:1:0.00	1,356	9.0
52	412	678	82	339	4.86:1:0.29	3,580	10.6
53	566	931	100	670	13.00:1:0.17	4,077	6.1
54	1,266	2,082	98	1,238	4.84:1:0.44	9,771	7.9
Prince Albert	29	47	28	8	7.89:1*:0.00	386	48.3
55	551	907	100	591	5.08:1:0.17	4,661	7.9
Total	5,111	8,406	98	4,999	6.40:1:0.33	38,948	7.8

Appendix 2. (Continued).

Ecozone and WMZ	# Actual Hunters	# Zone Hunters	Hunter Success (%)	Harvest	Harvest Structure Bucks:Does:Fawns	Hunter-days	Hunter-days/ Animal
Forest 1st Licence							
56	777	1,459	81	631	4.69:1:0.46	7,176	11.4
57	386	726	78	300	73.631:0.213	3,470	11.6
58	67	126	70	47	5.00:1:0.00	623	13.3
59	613	1,151	90	552	4.58:1:0.25	4,842	8.8
60	55	103	85	47	1.50:1:0.50	331	7.0
61	8	16	100	8	7.89:1*:0.00	95	11.9
62	92	174	35	32	1.00:1:0.00	465	14.5
63	130	245	48	63	7.00:1:0.00	1,057	16.8
64	67	126	100	71	1.25:1:0.00	591	8.3
65	38	71	63	24	23.66:1*:0.00	260	10.8
66	143	268	88	126	2.20:1:1.00:	938	7.4
67	407	765	87	355	3.00:1:0.09	3,557	10.0
68N	151	284	73	110	11.00:1:2.00	1,128	10.3
68S	50	95	94	47	47.32:1*:0.00	418	8.9
69	227	426	100	244	4.17:1:0.00	1,727	7.1
70	4	8	0	0	0.00:1*:0.00	16	0.0
73	25	47	64	16	15.77:1*:0.00	150	9.4
Total	3,240	6,090	83	2,673	5.56:1:0.19	26,844	10.0
Provincial Total	40,314	58,576	85	34,207	7.65:1:0.27	232,361	6.8

Appendix 3. **Resident first non-trophy white-tailed deer rifle harvest by ecozone and WMZ, 1998.**

Ecozone and WMZ	# Actual Hunters	# Zone Hunters	Hunter Success (%)	Harvest	Harvest Structure Bucks:Does:Fawns	Hunter-days	Hunter-days/ Animal
Grassland							
1	269	278	77	208	0.00:1:0.14	486	2.3
4	504	521	81	408	0.00:1:0.27	1,284	3.1
Total	772	798	80	616	0.00:1:0.22	1,770	2.9
Farmland							
15	334	338	75	252	0.00:1:0.45	755	3.0
16	454	460	76	347	0.00:1:0.29	1,258	3.6
17	736	746	71	521	0.00:1:0.22	2,013	3.9
18	394	399	73	286	0.00:1:0.22	920	3.2
19	522	529	71	373	0.00:1:0.48	1,527	4.1
20	651	660	64	417	0.00:1:0.37	3,176	7.6
21	1,164	1,180	74	859	0.00:1:0.24	4,582	5.3
22	599	608	65	391	0.00:1:0.25	1,736	4.4
30	1,147	1,163	70	807	0.00:1:0.45	4,834	6.0
Saskatoon	334	338	57	191	0.00:1:0.47	2,074	10.9
Total	6,335	6,422	70	4,444	0.00:1:0.33	22,875	5.1
Parkland							
31	398	408	87	347	0.00:1:0.19	1,276	3.7
32	356	365	76	269	0.00:1:0.68	894	3.3
33	305	312	63	191	0.00:1:0.58	790	4.1
34	703	720	82	573	0.00:1:0.40	2,143	3.7
35	737	755	78	573	0.00:1:0.32	2,161	3.8
36	474	486	68	321	0.00:1:0.24	1,953	6.1
37	1,939	1,987	86	1,666	0.00:1:0.33	8,643	5.2
38	449	460	64	286	0.00:1:0.634	1,631	5.7
39	754	772	71	538	0.00:1;0.48	2,725	5.1
40	449	460	66	295	0.00:1:0.27	1,822	6.2
42	1,067	1,093	68	729	0.00:1:0.47	5,025	6.9
43	576	590	60	347	0.00:1:0.48	2,334	6.7
47	898	920	74	668	0.00:1:0.35	4,053	6.1
Total	9,103	9,329	75	6,803	0.00:1:0.36	35,450	5.2
Forest Fringe							
48	507	521	63	321	0.00:1:0.61	2,326	7.2
49	702	720	84	590	0.00:1:0.19	2,586	4.4
50	583	599	73	425	0.00:1:0.36	2,005	4.7
51	152	156	68	104	0.00:1:0.71	720	6.9
52	347	356	63	217	0.00:1:1.27	2,083	9.6
53	575	590	83	477	0.00:1:0.28	1,927	4.0
54	1,200	1,232	82	989	0.00:1;0.39	4,035	4.1
55	457	469	86	391	0.00:1:0.36	1,927	4.9
Prince Albert	51	52	51	26	0.00:1:0.00	460	17.7
Total	4,574	4,695	77	3,540	0.00:1:0.38	18,069	5.1
Provincial Total	20,785	21,244	74	15,403	0.00:1:0.35	78,164	5.1

Appendix 4. Resident second non-trophy white-tailed deer rifle harvest by ecozone and WMZ, 1998.

Ecozone and WMZ	# Actual Hunters	# Zone Hunters	Hunter Success (%)	Harvest	Harvest Structure Bucks:Does:Fawns	Hunter-days	Hunter-days/ Animal
Forest Fringe							
Prince Albert	1	2	100	1	0.00:1*:1.04	15	15.0
Total	1	2	100	1	0.00:1*:1.00	15	15.0
Provincial Total	1	2	100	1	0.00:1*:1.00	15	15.0

Mule Deer *(Odocoileus hemionus)*

by A.A. Arsenault

1.0 Long-term Management Objectives

- Long-term winter population objectives have not been formally established but are tentatively set at 40,000 mule deer with a fall (pre-hunt) herd structure of 50 bucks:100 does:85 fawns.
- To retain 10,000 km² of critical mule deer habitat as described by the terrestrial wildlife habitat inventory. Area specific long term mule deer range objectives have not yet been established.
- Once conservation needs are met, to provide priority allocation for subsistence food needs.
- Long-term harvest objectives have not been formally established.
- To obtain the informed consent of all potentially affected interests in structuring area specific population objectives, management strategies and regulations.

2.0 Population Status

2.1 Provincial Overview

As a result of selective harvests and winter mortality in 1995/96 and 1996/97, mule deer populations declined significantly in many areas throughout the Grassland and Farmland ecozones. With the mild winters of 1997/98 and 1998/99, mule deer reproduction is anticipated to be above average in 1999. At present, buck numbers appear to be healthy and able to sustain reasonable harvests although declines were expected and have occurred. But, the large doe harvests in the early 1990s have impacted on the number of replacement bucks being introduced into the annual recruitment system.

Current winter population size is estimated to be approximately 30-40,000 mule deer, but an intensive review of long-term population density and structure trends is required to refine this estimate.

2.1.1 Population Size/Density Surveys

Population surveys were flown in 19-26 January 1999 in the Great Sandhills (WMZ 9, 10), Burstall Sandhills (WMZ 11), Cabri Sandhills (WMZ12), South Sask. River (WMZ 13 and 14), Douglas Provincial Park (WMZ 23) and Couteau Pasture (WMZ 24). Surveys from previous years for WMZs 9 - 12 are presented in Table 1. Mule deer density for the 2888 km² area surveyed in WMZ 13 and 14 was 1.05 ± 41% mule deer/km² (90% CI). Mule deer densities for WMZ 23 and 24 were 4.86 ±51% (95% CI) mule deer/km² and 7.32 ±52% (95% CI) mule deer/km², respectively.

Table 1. Mule deer population survey summary, WMZs 9 - 12 .

WMZ (Survey Block)	Year	Area km^2	Estimated Population ± 95% C.I.	Density Deer/km^2	% change	Survey Method[a]
9 (Great Sandhills)	1998-99	436	1264 ± 53%	2.9	80.3	LT
	1996-97	436	701 ± 52%	1.6	167.0	LT
	1995-96	436	278	0.6	-56.9	LT
	1993-94	371	645 ± 53%	1.7	-45.7	LT
	1992-93	436	1,187 ± 31%	2.7	—	LT
	1992-93	436 (149)[c]	1,460 (596)[c]	3.3 (4.2)[c]	78.5	TL
	1989-90	161	818 ± 34%	5.2	—	TL-SB
10 (Great Sandhills)	1998-99	896	3639 ± 20%	4.1	6	LT
	1996-97	896	3423 ± 23%	3.8	3.0	LT
	1995-96	896	3384	3.7	3.6	LT
	1994-95	896	3,266 ± 24%	3.6	-13.6	LT
	1993-94	719	3,783 ± 23%	5.3	-37.1	LT
	1992-93	895	6,014 ± 22%	6.7	—	LT
	1992-93	895	5504	6.2	12.2	TL
	1989-90	872	4,905 ± 15%	5.7	—	TL-SB
11 (Burstall Sandhills)	1998-99	83	919 ± 71%	11.1	37.6	
	1996-97	83	668 ± 47%	8.1	33.0	LT
	1995-96	83	519	6.1	53.5	LT
	1994-95	83	338 ± 154%	4.1	-24.7	LT
	1993-94	76	449 ± 66%[b]	5.9	-15.3	LT
	1992-93	83	530 ± 50%	6.4	45.6	LT
	1992-93	83	364	4.4	—	TL
	1990-91	84	758 ± 27%	9.0	—	TL-SB
12 (Cabri Sandhills)	1998-99	185	578 ± 56%	3.1	29.5	LT
	1996-97	185	820 ± 56%	4.4	100.0	LT
	1995-96	185	416	2.2	52.4	LT
	1994-95	185	273 ± 96%	1.5	-60.5	LT
	1993-94	164	691 ± 47%	4.2	-27.6	LT
	1992-93	185	955 ± 57%	5.2	—	LT
	1992-93	185	876	4.7	-13.5	TL
	1989-90	183	1,013± 29%	5.6	—	TL-SB

[a]LT = Line transect, TL = trend line, TL-SB = trend line treated as a stratified block design, SRB = stratified random block.
[b]Size of mule deer groups in 1993-94 were significantly larger ($P<0.05$) than in 1992-93.
[c]Estimate in parentheses for similar areas flown in 1989-90.

2.1.2 Population Structure Surveys

Based on information collected in the preseason Cooperative Deer Management Survey, buck/doe ratios have increased, and fawn/doe ratios were similar to the past three years (Table 2).

Table 2. Provincial mule deer population structure based on pre-season field observations, September to November, 1995-98.

	Bucks[a]/Doe				Fawns/Doe				Sample Size			
Ecozone	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998
Grassland	0.38	0.46	0.47	0.52	0.64	0.61	0.76	0.75	2,728	1,765	1,438	2,129
Farmland	0.54	0.49	0.44	0.49	0.89	0.81	0.68	0.74	2,857	2,810	1,988	3,428
Parkland	0.27	0.35	0.43	0.48	0.80	0.77	1.32	0.88	669	1,103	546	738
Fringe	0.36	1.14	0.50	0.50	1.10	1.00	1.00	0.97	244	22	5	89
Forest	0.38	—	1.00	1.22	1.00	—	—	1.44	19	—	2	33
Total	0.43	0.45	0.45	0.50	0.78	0.73	0.78	0.76	6,517	5,700	3,979	6,417

[a] Bucks/Doe = (yearling bucks + mature bucks + unclassified adult bucks)/total adult females.

Aerial surveys in the Great Sandhills (WMZs 9 & 10) were conducted in October 1998. Fawn/doe ratios were lower than in 1997 (Table 3). Adult sex ratios (buck:doe) increased compared to 1997.

Table 3. Fall aerial survey of mule deer herd structure, Great Sandhills, 1993-98.

		Number of Deer Classified					# of Bucks in Antler Class					
WMZ	Survey Year	Bucks	Does	Fawns	Total	Herd Structure Bucks:Does:Fawns	A	B	C	D	E	F
9	1993	85	172	108	365	0.49:1.00:0.63	12	10	39	12	12	0
	1994	50	103	65	218	0.49:1.00:0.63	1	7	13	15	14	0
	1995	63	151	78	292	0.42:1.00:0.52	6	7	11	12	27	0
	1996	45	96	55	196	0.47:1.00:0.57	3	10	8	12	12	0
	1997	18	107	62	187	0.17:1.00:0.58	1	4	9	3	1	0
	1998	52	144	66	262	0.36:1.00:0.46	27	23	23	25		0
10	1993	157	216	90	463	0.73:1.00:0.42	19	18	39	52	29	0
	1994	50	216	109	375	0.23:1.00:0.50	4	13	17	8	8	0
	1995	113	255	83	451	0.44:1.00:0.33	3	10	32	31	37	0
	1996	98	194	87	379	0.50:1.00:0.45	9	9	16	18	46	0
	1997	47	122	63	232	0.39:1.00:0.52	7	1	8	15	16	0
	1998	75	142	64	281	0.53:1.00:0.45	9	12	15	20	40	0

2.2 Mortality

2.2.1 Review of the 1998 Hunting Seasons

2.2.1.1 Licence Sales

Mule deer licences were available only to Saskatchewan residents in 1998. Draw licences were valid for archery, muzzleloader and rifle seasons. An over-the-counter either-sex archery licence was available to hunters, including those unsuccessful in acquiring a licence through the draw. Table 1 summarizes licence sales in 1998. Either-sex licence allocations have were reduced in 1998 (Table 4) in response to the harsh winter of 1996-97 and the potential impact this may have on the reproductive potential of the herd. Non-trophy quotas were eliminated throughout most of the Grassland and Farmland ecozones in 1998 to protect the female segment of the population and allow population structure to return to more natural ratios.

Table 4. Provincial mule deer licence sales, 1995-1998

Season	1995	1996	1997	1998	% Change from 1997
Draw Either-sex	5,966	6,105	5,719	3,852	-32.6
Regular Archery	906	865	846	1,107	30.9
Draw Non-trophy	2,014	1,864	711	252	-64.6
Total	8,886	8,834	7,276	5,211	-38.2

2.2.1.2 Hunting Activity and Harvest

The number of hunters declined by 38% compared with 1997 (Table 4) because of substantial quota restrictions in response to winter mortality during the 1997/98 winter. Hunter success dropped from 73%(1997) to 65% (1998). This, combined with reduced quotas resulted in a 34% reduction in harvest from 5,392 in 1997 to 3,554 mule deer in 1998 (Table 5). It took 22% more time for hunters to harvest their animal in 1998 (5.6 hunter-days/animal) compared to 1997 (4.6 hunterdays/animal).

Table 5 summarizes the 1998 mule deer harvest by ecozone. Tables 6-8 summarize hunting activity and harvest for each licence type by ecozone and season. About 4% of hunters receiving a draw Mule Deer tag hunted during the archery season. The number of archers participating in the regular archery season increased by 31% (Table 4).

Table 5. Provincial mule deer harvest, all licence types and seasons pooled, 1998.

Ecozone	# Zone Hunters	Harvest					Harvest Structure Bucks:Does:Fawns	Hunter Success (%)	Hunter-days	Hunter-days/ Animal
		Bucks	Does	Fawns	Unkn	Total				
Grassland	1,999	1,109	217	57	12	1,395	5.11:1.00:0.26	70	5,876	4.2
Farmland	2,443	1,123	328	79	6	1,536	3.42:1.00:0.24	63	10,464	6.8
Parkland	902	305	193	72	3	573	1.58:1.00:0.37	64	3,032	5.3
Forest Fringe	121	32	15	3	0	50	2.13:1.00:0.20	41	421	8.4
Total	5,465	2,569	753	211	21	3,554	3.41:1.00:0.28	65	19,793	5.6

Table 6. Estimated hunting activity and harvest during the either-sex draw, by season and ecozone, 1998.

Season Ecozone	# Zone Hunters	Harvest					Harvest Structure Bucks:Does:Fawns	Hunter Success (%)	Hunter-days	Hunter-days/ Animal
		Bucks	Does	Fawns	Unkn	Total				
Archery										
Grassland	62	3	0	6	3	12	3.00:1* :6.00	14	309	35.0
Farmland	50	6	0	3	0	9	6.00:1* :3.00	18	289	32.7
Parkland	26	9	0	0	0	9	9.00:1* :0.00	33	141	16.0
Forest Fringe	18	0	0	0	0	0	—	0	103	—
Total	156	18	0	9	3	30	18.00:1* :9.00	19	842	28.1
Muzzleloader										
Grassland	209	65	18	9	0	92	3.61:1.00:0.50	44	619	6.8
Farmland	318	91	44	6	3	144	2.07:1.00:0.14	44	1,217	8.6
Parkland	100	29	12	0	0	41	2.42:1.00:0.00	41	418	10.1
Forest Fringe	21	0	3	0	0	3	0.00:1.00:0.00	14	68	23.0
Total	648	185	77	15	3	280	2.40:1.00:0.19	43	2,322	8.3
Rifle										
Grassland	1,411	993	153	29	9	1,184	6.49:1.00:0.19	83	3,320	2.8
Farmland	1,408	943	215	56	3	1,217	4.38:1.00:0.26	86	3,715	3.1
Parkland	486	253	94	29	3	379	2.69:1.00:0.31	78	1,989	5.3
Forest Fringe	68	32	12	3	0	47	2.75:1.00:0.25	70	209	4.4
Total	3,373	2,221	474	117	15	2,827	4.68:1.00:0.25	83	9,233	3.3
Prov. Total	4,177	2,424	551	141	21	3,137	4.40:1.00:0.26	75	12,397	4.0

Note: See Appendices 1, 3 and 4 for a summary of draw either-sex harvest by WMZ.

Table 7. Estimated hunting activity and harvest during the non-trophy draw, by season and ecozone, 1998.

Season Ecozone-	# Zone Hunters	Harvest					Harvest Structure Bucks:Does:Fawns	Hunter Success (%)	Hunter-days	Hunter-days/ Animal
		Bucks	Does	Fawns	Unkn	Total				
Archery										
Grassland	0	0	0	0	0	0	—	0	0	0.0
Farmland	0	0	0	0	0	0	—	0	0	0.0
Parkland	10	0	0	0	0	0	—	0	60	—
Total	10	0	0	0	0	0	—	0	60	—
Muzzleloader										
Grassland	0	0	0	0	0	0	—	0	0	0.0
Farmland	0	0	0	0	0	0	—	0	0	0.0
Parkland	17	0	3	0	0	3	0.00:1.00:0.00	20	56	17.0
Total	17	0	3	0	0	3	0.00:1.00:0.00	20	56	17.0
Rifle										
Grassland	49	0	32	6	0	38	0.00:1.00:0.18	87	73	1.7
Farmland	0	0	0	0	0	0	—	0	0	0.0
Parkland	139	0	70	36	0	106	0.00:1.00:0.63	70	315	4.4
Total	188	0	102	42	0	144	0.00:1.00:0.41	77	388	2.7
Prov. Total	215	0	105	42	0	147	0.00:1.00:0.40	68	504	3.4

Note: See Appendix 5 for a summary of draw non-trophy harvest by WMZ.

Table 8. Estimated hunter success and harvest pressure during the regular mule deer archery season, 1998.

Ecozone	Zone Hunters	Harvest					Harvest Structure Bucks:Does:Fawns	Hunter Success (%)	Hunter-days	Hunter-days/ Animal
		Bucks	Does	Fawns	Unkn	Total				
Grassland	268	48	14	7	0	69	3.50:1.00:0.50	26	1,555	22.6
Farmland	667	83	69	14	0	166	1.20:1.00:0.20	25	5,243	31.8
Parkland	124	14	14	7	0	35	1.00:1.00:0.50	0	41	—
Forest Fringe	14	0	0	0	0	0	—	0	41	—
Prov. Total	1,073	145	97	28	0	270	1.50:1.00:0.29	25	7,693	28.7

Note: See Appendix 2 for a summary of regular archery harvest by WMZ.

3.0 Management Objectives and Strategies

- During the early 1990s, the overall population management objective was to reduce mule deer populations to levels tolerable to landowners. The strategy involved selective harvest techniques where non-trophy seasons were used to lower the reproductive potential (number of does) of the population, and harvest the young (which are already highly predisposed to natural mortality). Either-sex season quotas (77% of the harvest was bucks) were apportioned in a way that afforded quality opportunity for hunters, yet maintained buck proportions suitable for breeding purposes and overall hunting demand. However, short term population management objectives for herd reduction have exceeded the desired level. Therefore, quotas will remain restricted to promote population growth. See Appendix 6 for a summary of draw non-trophy and either-sex quotas from 1994-1998.

- Continue to monitor mule deer population densities in various parts of its range as funding and priorities permit.

- Continue monitoring mule deer population structure and productivity using the Cooperative Deer Management Survey.

- Develop a long-term population management strategy for mule deer.

- Retain similar quota levels for either-sex and non-trophy seasons as in 1998. Split WMZ 45 along grid road #674 with 100 antlerless mule deer licences available in each half of the zone, to better distribute hunting pressure and harvest. Introduce an new quota of 25 antlerless mule deer licences in the part of WMZ 14 west of grid road #649.

4.0 Appendix

Appendix 1. Estimated hunter success and harvest pressure by WMZ during the draw either-sex mule deer rifle season, 1998 (based on Hunter Harvest Survey).

Ecozone/ WMZ	# Zone Hunters	Harvest					Harvest Structure Bucks:Does:Fawns	Hunter Success (%)	Hunter-days	Hunter-days/ Animal
		Bucks	Does	Fawns	Unkn	Total				
Grassland										
1	188	138	30	3	0	171	4.67:1.00:0.11	91	428	2.5
2	268	158	47	3	6	214	3.33:1.00:0.07	78	644	3.1
3	91	59	15	3	0	77	4.00:1.00:0.20	84	200	2.6
5	44	36	3	0	0	39	13.00:1.00:0.00	88	96	2.5
6	142	104	6	3	3	116	18.00:1.00:0.50	80	413	3.7
7	40	31	7	0	0	38	4.67:1.00:0.00	94	80	2.1
9	62	50	4	0	0	54	13.00:1.00:0.00	88	131	2.4
10	189	151	8	5	0	164	18.33:1.00:0.67	87	482	2.9
11	43	41	3	0	0	44	16.00:1.00:0.00	100	150	3.5
12	41	18	9	0	0	27	2.00:1.00:0.00	64	71	2.7
13	79	53	5	7	0	65	11.50:1.00:1.50	82	134	2.1
14	180	114	19	3	0	136	6.00:1.00:0.17	75	398	2.9
Total	1411	993	153	29	9	1184	6.48:1.00:0.19	83	3320	2.8
Farmland										
15	75	40	23	6	0	69	1.75:1.00:0.25	92	156	2.3
16	50	19	13	16	0	48	1.40:1.00:1.20	95	122	2.6
18	70	53	9	0	0	62	6.00:1.00:0.00	88	146	2.4
19	176	116	41	6	0	163	2.85:1.00:0.15	93	427	2.6
20	31	24	3	3	0	30	7.00:1.00:1.00	100	177	5.8
21	73	33	22	0	0	55	1.50:1.00:0.00	76	181	3.3
22	45	28	3	0	0	31	8.00:1.00:0.00	69	111	3.6
23	137	106	10	0	0	116	10.25:1.00:0.00	85	373	3.2
24	135	102	13	5	0	120	8.00:1.00:0.40	89	288	2.4
25	84	62	4	4	0	70	14.00:1.00:1.00	84	182	2.6
26	112	89	3	3	3	98	27.00:1.00:1.00	85	270	2.8
27	96	73	3	0	0	76	28.00:1.00:0.00	78	186	2.5
28	43	25	9	0	0	34	2.75:1.00:0.00	79	111	3.3
29	139	79	38	10	0	127	2.08:1.00:0.25	91	500	4.0
30	58	42	9	0	0	51	4.50:1.00:0.00	88	243	4.78
SWMZ	15	10	0	0	0	10	10.29:1* :0.00	67	113	11.0
Total	1339	943	215	56	3	1217	4.38:1.00:0.26	86	3715	3.1

Appendix 1 (Continued)

Ecozone/ WMZ	# Zone Hunters	Harvest					Harvest Structure Bucks:Does:Fawns	Hunter Success (%)	Hunter-days	Hunter-days/ Animal
		Bucks	Does	Fawns	Unkn	Total				
Parkland										
31	25	8	0	8	0	16	8.33:1* :8.33	67	92	5.5
36	21	7	4	7	0	18	2.00:1.00:2.00	83	71	4.0
40	44	11	22	0	0	33	0.50:1.00:0.00	75	72	2.2
41	52	21	14	3	0	38	1.50:1.00:0.25	73	277	7.3
42	22	8	6	0	0	14	1.50:1.00:0.00	63	58	4.2
44	42	17	8	4	0	29	2.00:1.00:0.50	70	233	8.0
45	177	95	31	7	3	136	3.11:1.00:0.22	75	572	4.3
46	130	97	16	4	0	117	6.00:1.00:0.25	91	641	5.4
47	87	50	17	4	0	71	3.00:1.00:0.25	81	383	5.4
Total	486	253	94	29	3	379	2.69:1.00:0.31	78	1989	5.3
Forest Fringe										
54	42	25	6	3	0	34	4.50:1.00:0.50	80	125	3.8
55	22	6	6	0	0	12	1.00:1.00:0.00	50	73	6.5
Total	68	32	12	3	0	47	2.75:1.00:0.25	70	209	4.4
Prov Total	3373	2221	474	118	15	2828	4.68:1.00:0.25	83	9233	3.3

Appendix 2. Estimated hunter success and harvest pressure by WMZ during the regular archery mule deer season, 1998.

Ecozone/ WMZ	# Zone Hunters	Harvest					Harvest Structure Buck:Doe:Fawn	Hunter Success (%)	Hunter-days	Hunter-days/ animal
		Bucks	Does	Fawns	Unkn	Total				
Grassland										
1	21	7	0	0	0	7	7.00:1* :0.00	33	179	26.0
2	21	7	7	0	0	14	1.00:1.00:0.00	67	289	21.0
3	7	0	7	0	0	7	0.00:1.00:0.00	100	14	2.0
5	34	14	0	0	0	14	14.00:1* :0.00	40	193	14.0
6	34	7	0	0	0	7	7.00:1* :0.00	20	131	19.0
7	21	7	0	0	0	7	7.00:1* :0.00	33	186	27.0
13	69	7	0	7	0	14	7.00:1* :7.00	20	323	23.5
14	62	0	0	0	0	0	—	0	241	—
Total	268	49	14	7	0	70	3.50:1.00:0.50	26	1,555	22.6
Farmland										
17	41	7	0	7	0	14	7.00:1* :7.00	33	248	18.0
18	27	0	0	0	0	0	—	0	158	—
19	34	0	14	0	0	14	0.00:1.00:0.00	40	351	25.5
20	34	7	0	0	0	7	7.00:1* :0.00	20	468	68.0
21	34	7	0	0	0	7	7.00:1* :0.00	20	110	16.0
22	21	7	0	0	0	7	7.00:1* :0.00	33	96	14.0
23	124	0	21	0	0	21	0.00:1.00:0.00	17	950	46.0
24	124	28	14	7	0	49	2.00:1.00:0.50	39	798	16.6
25	7	0	0	0	0	0	—	0	28	—
26	14	7	0	0	0	7	7.00:1* :0.00	50	78	11.0
27	48	14	0	0	0	14	14.00:1* :0.00	29	310	22.5
28	14	7	0	0	0	7	7.00:1* :0.00	50	179	26.0
29	96	0	14	0	0	14	0.00:1.00:0.00	14	956	69.5
30	41	0	7	0	0	7	0.00:1.00:0.00	17	344	50.0
SWMZ	7	0	0	0	0	0	—	0	172	—
Total	667	84	70	14	0	168	1.20:1.00:0.20	25	5,243	31.8
Parkland										
31	14	0	0	0	0	0	—	0	96	—
41	14	0	0	0	0	0	—	0	145	—
42	7	0	0	0	0	0	—	0	103	—
44	7	0	0	0	0	0	—	0	28	—
45	48	7	14	7	0	28	0.50:1.00:0.00	57	351	12.8
46	21	7	0	0	0	7	7.00:1* :0.00	33	96	14.0
47	14	0	0	0	0	0	—	0	34	—
Total	124	14	14	7	0	35	1.00:1.00:0.50	28	853	24.8
Forest Fringe										
54	7	0	0	0	0	0	—	0	34	—
55	7	0	0	0	0	0	—	0	7	—
Total	14	0	0	0	0	0	—	0	41	—
Prov. Total	1,073	145	96	28	0	269	1.50:1.00:0.29	25	7,693	28.7

Appendix 3. Estimated hunter success and harvest pressure by WMZ during the draw either-sex archery mule deer season, 1998.

Ecozone/ WMZ	# Zone Hunters	Harvest					Harvest Structure Buck:Doe:Fawn	Hunter Success (%)	Hunter-days	Hunter-days/ Animal
		Bucks	Does	Fawns	Unkn	Total				
Grassland										
1	7	0	0	3	0	3	0.00:1* :3.00	50	23	7.0
2	13	0	0	0	3	3	—	0	88	—
3	3	0	0	0	0	0	—	0	3	—
5	3	0	0	0	0	0	—	0	41	—
7	4	0	0	0	0	0	—	0	18	—
9	10	2	0	0	0	2	2.00:1* :0.00	20	58	30.0
11	3	0	0	0	0	0	—	0	8	—
13	2	0	0	0	0	0	—	0	12	—
14	13	0	0	3	0	3	0.00:1* :3.00	25	25	8.0
Total	62	2	0	6	3	11	2.00:1* :6.00	14	309	35.0
Farmland										
16	3	0	0	0	0	0	—	0	11	—
19	3	0	0	0	0	0	—	0	6	—
20	3	0	0	3	0	3	0.00:1* :3.00	3	7	2.0
21	2	0	0	0	0	0	—	0	9	—
22	3	0	0	0	0	0	—	0	7	—
23	3	0	0	0	0	0	—	0	16	—
24	10	3	0	0	0	3	3.00:1* :0.00	3	115	45.0
25	4	0	0	0	0	0	—	0	40	—
26	3	0	0	0	0	0	—	0	3	—
28	4	2	0	0	0	2	2.00:1* :0.00	2	20	9.0
29	3	0	0	0	0	0	—	0	6	—
30	2	0	0	0	0	0	—	0	7	—
Total	50	5	0	3	0	8	5.00:1* :3.00	9	289	32.7
Parkland										
42	6	0	0	0	0	0	—	0	11	—
45	20	7	0	0	0	7	7.00:1* :0.00	35	147	21.0
46	4	4	0	0	0	4	4.00:1* :0.00	100	4	1.0
Total	30	11	0	0	0	11	11.00:1* :0.00	37	162	14.7
Forest Fringe										
54	11	0	0	0	0	0	—	0	69	—
55	6	0	0	0	0	0	—	0	28	—
Total	17	0	0	0	0	0	—	0	97	—
Prov. Total	156	18	0	9	3	30	18.00:1* :9.00	27	843	31.8

Appendix 4. Estimated hunter success and harvest pressure by WMZ during the draw either-sex muzzleloader mule deer season, 1998.

Ecozone/ WMZ	# Zone Hunters	Harvest					Harvest Structure Buck:Doe:Fawn	Hunter Success (%)	Hunter-days	Hunter-days/ Animal
		Bucks	Does	Fawns	Unkn	Total				
Grassland										
1	13	3	0	0	0	3	3.00:1* :0.00	25	56	17.0
2	25	9	0	3	0	12	9.00:1* :3.00	50	57	4.5
3	9	9	0	0	0	9	9.00:1* :0.00	100	24	2.7
5	11	5	0	0	0	5	5.00:1* :0.00	50	22	4.0
6	9	6	0	0	0	6	6.00:1* :0.00	67	23	4.0
7	7	2	0	0	0	2	2.00:1* :0.00	33	29	13.0
9	6	4	2	0	0	6	2.00:1.00:0.00	100	8	1.3
10	33	0	0	0	0	0	—	0	104	—
11	8	0	3	0	0	3	0.00:1.00:0.00	33	28	11.0
12	9	3	6	0	0	9	0.50:1.00:0.00	100	26	3.0
13	37	12	0	5	0	17	12.00:1* :5.00	44	11	7.0
14	28	6	6	0	0	12	1.00:1.00:0.00	44	88	7.0
Total	195	59	17	8	0	84	3.67:1.00:0.50	91	476	7.0
Farmland										
15	6	0	0	0	0	0	—	0	52	—
16	8	0	0	0	0	0	—	0	58	—
18	22	0	4	0	0	4	0.00:1.00:0.00	20	53	12.0
19	35	9	3	0	3	15	3.00:1.00:0.00	36	132	10.5
20	48	10	14	3	0	27	0.75:1.00:0.25	57	205	7.5
21	2	0	0	0	0	0	—	0	13	—
22	14	7	0	0	0	7	7.00:1* :0.00	50	59	8.5
23	23	8	8	0	0	16	1.00:1.00:0.00	67	57	3.7
24	23	10	0	0	0	10	10.00:1* :0.00	44	71	7.0
25	20	11	4	0	0	15	2.50:1.00:0.00	78	58	3.7
26	26	10	3	0	0	13	3.00:1.00:0.00	50	72	5.5
27	23	5	0	0	0	5	5.00:1* :0.00	22	101	19.5
28	9	0	5	0	0	5	0.00:1.00:0.00	50	34	7.5
29	25	6	0	0	0	6	6.00:1* :0.00	25	92	14.5
30	19	7	0	2	0	9	7.00:1* :2.00	50	40	4.3
SWMZ	21	5	5	0	0	10	1.00:1.00:0.00	50	195	19.0
Total	324	88	46	5	3	142	2.07:1.00:0.13	44	1,292	8.6
Parkland										
36	4	0	0	0	0	0	—	0	14	—
40	11	6	0	0	0	6	6.00:1* :0.00	50	39	7.0
41	3	0	0	0	0	0	—	0	31	—
42	8	3	0	0	0	3	3.00:1* :0.00	33	19	7.0
44	12	6	2	0	0	8	3.00:1.00:0.00	67	48	5.8
45	41	3	7	0	0	10	0.50:1.00:0.00	25	177	17.3
46	28	12	0	0	0	12	12.00:1* :0.00	43	134	11.0
47	8	4	4	0	0	8	1.00:1.00:0.00	100	29	3.5
Total	115	34	13	0	0	47	2.50:1.00:0.00	41	418	10.1
Forest Fringe										
54	3	0	0	0	0	0	—	0	6	—
55	17	0	3	0	0	3	0.00:1.00:0.00	17	59	21.0
Total	20	0	3	0	0	3	0.00:1.00:0.00	14	68	23.0
Prov Total	648	186	77	15	3	281	2.42:1.00:0.19	43	2,321	8.4

Appendix 5. Estimated hunter success and harvest pressure by WMZ during the 1998 non-trophy mule deer season.

Season/ Ecozone/ WMZ	# Zone Hunters	Harvest					Harvest Structure Buck:Doe:Fawn	Hunter Success (%)	Hunter-days	Hunter-days/ Animal
		Bucks	Does	Fawns	Unkn	Total				
Archery										
Parkland										
45	10	0	0	0	0	0	—	0	59	—
Archery Total	10	0	0	0	0	0	—	0	59	—
Muzzleloader										
Parkland										
45	17	0	3	0	0	3	0.00:1.00:0.00	20	56	17.0
Muzzleloader Total	17	0	3	0	0	3	0.00:1.00:0.00	20	56	17.0
Rifle										
Grassland										
11	44	0	32	6	0	38	0.00:1.00:0.18	87	65	1.7
Total	44	0	32	6	0	38	0.00:1.00:0.18	87	65	1.7
Parkland										
45	76	0	43	20	0	63	0.00:1.00:0.46	83	161	2.6
46	86	0	36	23	0	59	0.00:1.00:0.63	68	209	3.5
Total	162	0	79	43	0	122	0.00:1.00:0.52	76	370	3.0
Rifle Total	189	0	111	49	0	160	0.00:1.00:0.41	79	435	2.6
Prov Total	216	0	114	55	0	169	0.00:1.00:0.39	71	550	3.3

Appendix 6 Mule deer licence quotas, ~~1994-98~~.

	Either-sex [a]					Non-trophy [b]				
WMZ	1994	1995	1996	1997	1998	1994	1995	1996	1997	1998
1	400	400	400	400	200	400	400	400	200	0
2	500	500	500	500	300	700[c]	200[c]	200[c]	0	0
3	150	150	150	150	100	300	50	50	50	0
4	200	150	150	100	0	200	0	50	0	0
5	200	200	150	150	50	300	0	0	0	0
6	200	200	200	200	150	400	100[d]	50[d]	50	0
7	150	150	100	100	50	100	100	50	50	0
8	50	50	50	50	0	100	0	50	0	0
9	250	250	200	150	75	300	0	0	0	0
10	500	400	400	400	200	800	0	0	0	0
11	50	50	50	50	50	150	0	0	0	50
12	100	50	50	50	50	150	0	0	0	0
13	400	400	350	300	100	700	200	100[f]	0	0
14	500	400	400	300	200[g]	800	200	100	0	0
15	75	75	75	100	75	0	0	0	0	0
16, 17 & 33	75	75	75	100	50	0	0	0	0	0
18	100	100	100	100	75	0	0	0	0	0
19	400	400	300	300	200	500	200	0	0	0
20	100	100	150	100	75	150	150	50	0	0
21	100	100	100	100	75	0	0	0	0	0
22	100	100	100	100	50	0	0	0	0	0
23	150	150	200	150	150	150	100	150	50	0
24	150	100	250	150	150	250[f]	100	150	100	0
25	200	125	125	125	100	200	0	0	0	0
26	200	125	125	125	125	200	0	0	0	0
27	100	100	100	100	100	200	0	0	0	0
28	50	50	50	50	50	0	0	0	0	0
29	100	150	250	250	150	0	0	0	0	0
30	100	100	100	100	70	0	0	0	0	0
SMZ[e]	—	50	50	50	35	—	—	0	0	0
31	75	75	75	50	25	0	0	0	0	0
36	50	50	50	25	25	0	0	0	0	0
40	50	50	50	50	50	0	0	0	0	0
41[g]	50	50	50	50	50	0	0	0	0	0
42	0	0	25	25	25	0	0	0	0	0
44	50	50	50	50	50	0	0	0	0	0

Appendix 6 (Continued)

	Either-sex [a]					Non-trophy [b]				
WMZ	1994	1995	1996	1997	1998	1994	1995	1996	1997	1998
45	100	150	200	200	200	0	100	200	100	100
46	100	100	150	150	150	100	100	150	100	100
47	100	100	100	100	100	0	0	0	0	0
54	0	50	50	50	50	0	0	0	0	0
55	0	50	50	50	50	0	0	0	0	0
Total	6,225	5,975	6,150	7,697	3,830	7,150	2,000	1,750	2,697	250

[a]Starting in 1993, either sex mule deer licences were valid in the archery, muzzleloader and rifle seasons; a separate licence will not be required for each weapon type.
[b]Starting in 1991, non-trophy mule deer licences were valid in the archery, muzzleloader and rifle seasons; a separate licence was not required for each weapon type.
[c]Split zone: 500 licences east of Highway No. 4 and 200 licences west of Highway No.4.
[d]Split zone: 100 licences east of the Lemsford Ferry grid #649 and 100 licences west of grid #649.
[f]Split zone: 150 licences west of Highway. Nos. 42, 373 and 45 and no licences south of Highway No. 44 and east of Highway Nos. 42, 373 and 45.
[h]SMZ (Saskatoon Wildlife Management Zone) was previously the Shotgun-Archery-Muzzleloader area of WMZ 30.
[i]Split zone: 200 licences east of Highway No. 4 only.
[j]Split zone: 150 licences east of Highway No. 4 and 50 licences west of Highway No. 4.
[k]Split zone: non-trophy licences valid only in the portion of zone 6 west of the grid road between Eastend and Piapot
[l]Split zone: non-trophy licences valid east of Highway No. 4 only.

Elk *(Cervus elaphus)*

by A.A. Arsenault

1.0 Long-term Management Objectives

- To maintain stable wintering populations in all Elk Management Units (EMUs) to attain a provincial winter population of 14,500 ±10% elk.
- To maintain a winter herd structure >15 bulls/100 cows/40 calves in all EMUs.
- To retain 30,870 km² of occupied primary elk range.
- Once conservation needs are met, to provide priority allocation for subsistence food needs.
- To provide a sustainable licenced harvest of 2,250 ±10% elk, with total harvest in any EMU not to reduce the EMU population below the winter population objective of that EMU ±10%.
- To obtain the informed consent of all potentially affected interests in structuring area specific population objectives, management strategies and regulations.

2.0 Population Status

2.1 Provincial Overview

The 1998/99 provincial winter elk population is estimated to be about 12,750, which is below the long-term winter population objective of 14,500 ±10% elk (Figure 1, Table 1, Arsenault 1998).

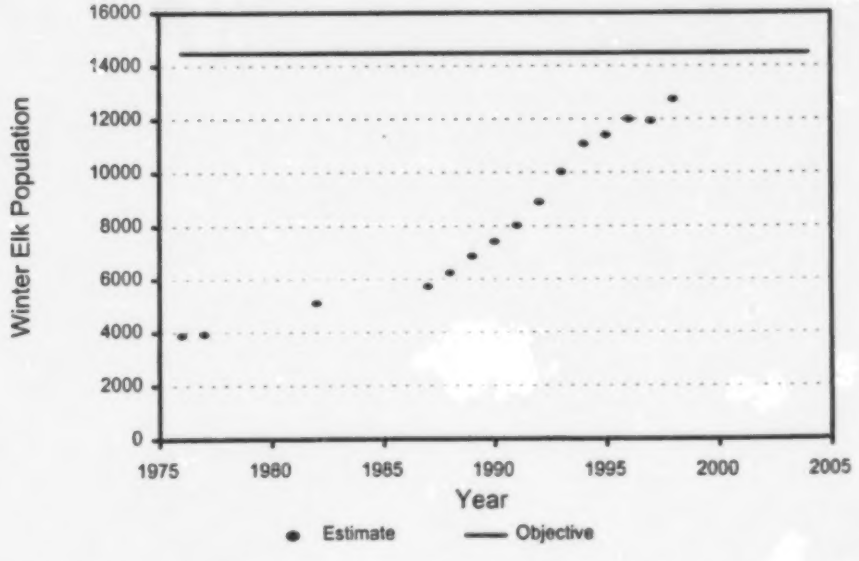

Figure 1. Provincial winter elk population estimate in relation to long-term population objective.

2.1.1 Population Size/Density Surveys

Elk size/density surveys were not conducted during the 1998/99 winter. Table 1 presents the survey effort and long -term population objectives for each Elk Management Unit (EMU) during the past 3 survey years.

Table 1. Winter elk population objectives and survey block densities based on aerial survey sampling.

Elk Management Unit (EMU)	WMZs	Estimated Winter Population Size		Survey Area (km^2)	Survey Estimated Elk Population Density (#/km^2 ±95% CL)		
		Long-term Objective	1998/99 Estimate		1996/97	1997/98	1998/99
Cypress West Block	7 (west ½)	750	975				
Cypress East-Centre	6, 7 (east ½)	200	320				
Moose Mountain	33	400	318	684		0.26 ±3.3%	
Duck Mountain	37	400	239	469		0.32 ±16.4%	
Tiger Hills	42	350	206				
MacDowall Forest	51,52	200	182				
Thickwood Hills	54	200	85				
Bronson-Divide	47, 67, 68N, 68S	750	424				
Porcupine Hills	48, 56, 57	4,500	4,500				
Pasquia Hills	49, 58, 59	1,575	1,500				
Cumberland Delta	60-62	750	413				
Candle Lake/Cub Hills	63, 64	1,500	1,275				
Fort a la Corne	43, 50	450	450				
PANP/Cookson	53 and PANP	750	545				
Clark-Sled	66	1,000	1,000				
Flotton Lake	69	300	151				
Matador/Riverhurst	14, 19	100	33				
Parkerview	39	75	0				
Dirt Hills	19 (E of hwy 36)	50	30				
Eastern Qu'Appelle	35	50	15				
Wood Mountain	1, 2	150	97				
Total		14,500	12,755				

2.1.2 Population Structure Surveys

There were no elk population surveys conducted during the 1998/99 winter. Survey results from the past 3 years are presented in Table 2.

Table 2. Aerial survey results of winter herd structure.

Elk Management Unit (EMU)	WMZs	Long-term Objective Bull:Cow:Calf	1996/97 Bull:Cow:Calf	n	1997/98 Bull:Cow:Calf	n	1998/99 Bull:Cow:Calf	n
Cypress West Block	7 (west ½)	>0.15:1.00:0.40						
Cypress East-Centre	6, 7 (east ½)	>0.15:1.00:0.40						
Moose Mountain	33	>0.15:1.00:0.40			0.91:1.00:0.17	50		
Duck Mountain	37	>0.15:1.00:0.40						
Tiger Hills	42	>0.15:1.00:0.40						
MacDowall Forest	51,52							
Thickwood Hills	54	>0.15:1.00:0.40						
Bronson-Divide	47, 67, 68N, 68S	>0.15:1.00:0.40						
Porcupine Hills	48, 56, 57	>0.15:1.00:0.40	0.20:1.00:0.54	289				
Pasquia Hills	49, 58, 59	>0.15:1.00:0.40						
Cumberland Delta	60-62	>0.15:1.00:0.40						
Candle Lake/Cub	63, 64	>0.15:1.00:0.40						
Fort a la Corne	43, 50	>0.15:1.00:0.40						
PANP/Cookson	53 and PANP	>0.15:1.00:0.40						
Clark-Sled	66	>0.15:1.00:0.40						
Flotton Lake	69	>0.15:1.00:0.40						
Matador/Riverhurst	14, 19	>0.15:1.00:0.40						
Parkerview	39	>0.15:1.00:0.40						
Dirt Hills	19 (E of hwy 36)	>0.15:1.00:0.40						
Eastern Qu'Appelle	35	>0.15:1.00:0.40						
Wood Mountain	1, 2	>0.15:1.00:0.40						

2.2 Biological Data Collection

2.2.1 Age Structure of Harvested Animals

Tooth samples were collected at several check stations and through conservation officer contact with hunters. Table 3 summarizes the cementum age structure of harvested elk for the past 3 years. The 1998/99 sample of 213 elk was composed of 68.5% males and 31.5% females. Tooth age analysis indicated that the elk harvest focussed on the younger segment of the population in each year, particularly males in the 1.5 to 4.5 age classes.

Table 3. Summary of cementum age classes of harvested elk, 1996 - 1998 hunting seasons.

	1996/97		1997/98		1998/99	
Age Class	Male	Female	Male	Female	Male	Female
0.5	8	8	9	6	4	1
1+	45	18	32	14	31	11
2+	43	7	27	12	49	7
3+	43	12	14	8	22	7
4+	13	11	15	3	15	12
5+	8	4	2	4	10	7
6+	7	5	4	0	6	9
7+	1	2	3	6	5	4
8+	0	3	0	3	3	1
9+	2	3	2	0	1	4
10+	1	1	0	0	2	0
11+	0	0	1	0	0	1
12+	0	2	0	2	0	1
13+	0	1	1	0	0	0
14+	0	1	0	0	0	0
15+	0	1	0	5	0	0
>15	0	0	0	0	0	2
Total	171	79	110	63	146	67
Mean age of ≥1.5	3.13	4.77	3.32	5.04	3.50	5.43

Antler Class	Proportion (%) in Antler Class (for males ≥1.5 years old)		
A	21	19	16
B	5	8	8
C	17	17	13
D	30	20	29
E	16	14	8
F	8	8	12
Unknown	3	11	16

2.3 Mortality

2.3.1 Review of the 1998 Hunting Seasons

2.3.1.1 Licence Sales

Table 4 summarizes elk licence sales in 1998. Regular elk licence sales remained above the 10-year average (Figure 2).

Table 4. Provincial elk licence sales, 1995-98.

Season	1995	1996	1997	1998	% Change from 1997
Regular	4,772	4,594	5,151	4,878	-5.3
Draw	1,531	1,308	1,310	1,339	2.2
Total	6,303	5,902	6,461	6,217	-3.8

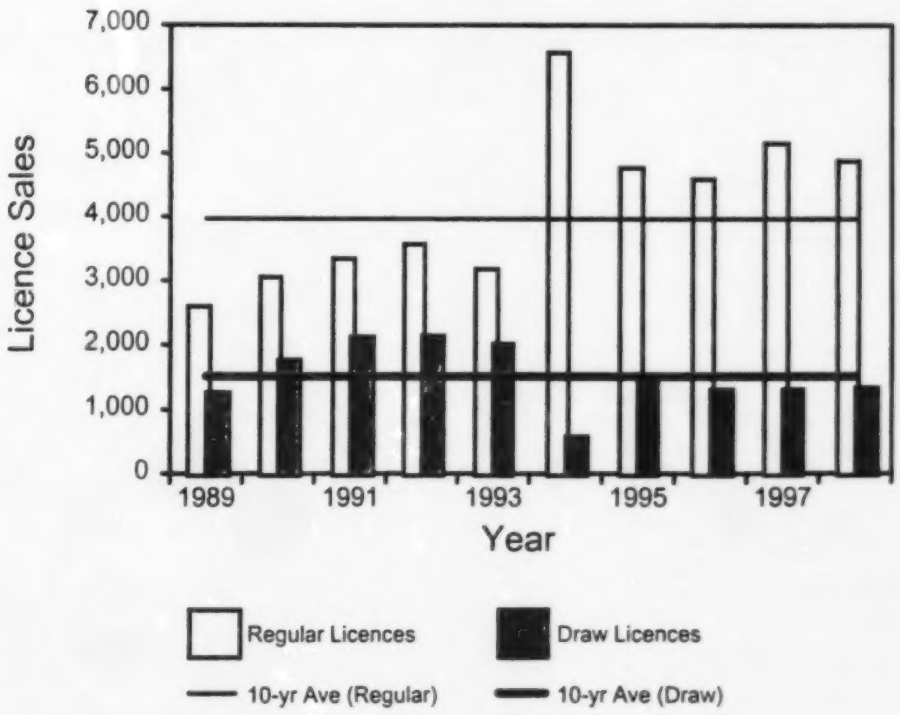

Figure 2. Elk licence allocations and 10-year average for regular and draw seasons, 1988-98.

2.3.1.2 Hunting Activity and Harvest

Provincial harvest of elk (all seasons pooled) increased 14.7% from 1,517 in 1997 to 1,740 in 1998 (Table 5). The 1998 regular and draw elk seasons generated a total of 33,428 hunter-days (Table 5), which is similar to 1997 (33,132 hunter-days) and 25.8% greater than 1996 (26,569). The number of regular season hunter-days in 1998 (28,166) was 15.5% greater than for 1997 (24,394) and 28.2% higher than in 1996 (21,970) (Table 5). Draw season hunter-days decreased 8.3% in 1998 (5,262) compared to 1997 (5,738), but was 14.4% greater than 1996 (4,599) (Table 5).

Table 5. Estimated provincial elk harvest, 1998 (based on the Hunter Harvest Survey).

Season		Licences Sold	# Actual Hunters	Harvest	% Hunter Success	Hunter-days	Harvest Structure Males:Females:Young
Regular	Archery	—	592	168	28	3,554	2.84:1.00:0.58
	Rifle	—	4,464	943	21	24,612	12.83:1.00:0.50
	Total	4,878	5,056	1,111	23	28,166	9.18:1.00:0.53
Draw	Archery	—	35	14	40	146	3.00:1.00:0.00
	Muzzleloader	—	56	3	6	202	0.0:1.00:0.00
	Rifle	—	525	257	49	2,459	1.09:1.00:0.22
	Non-trophy	—	702	355	50	2,455	0.00:1.00:0.23
	Total	1,310	1,318	629	48	5,262	0.32:1.00:0.22
Provincial Total		6,188	6,374	1,740	27	33,428	2.07:1.00:0.26

Hunter success rates are presented in Table 6. Long-term trends in provincial elk harvest and hunter success rates for regular and draw seasons are presented in Figures 3 and 4, respectively.

Table 6. A comparison of the estimated elk hunter success by season type, 1994-98.

	% Hunter Success				
Season	1994[a]	1995	1996	1997	1998
Regular	20	23	25	20	23
Draw	43	26	45	39	48
Provincial Total	22	24	28	23	27

[a] All northeast zones were taken off the draw in 1994.

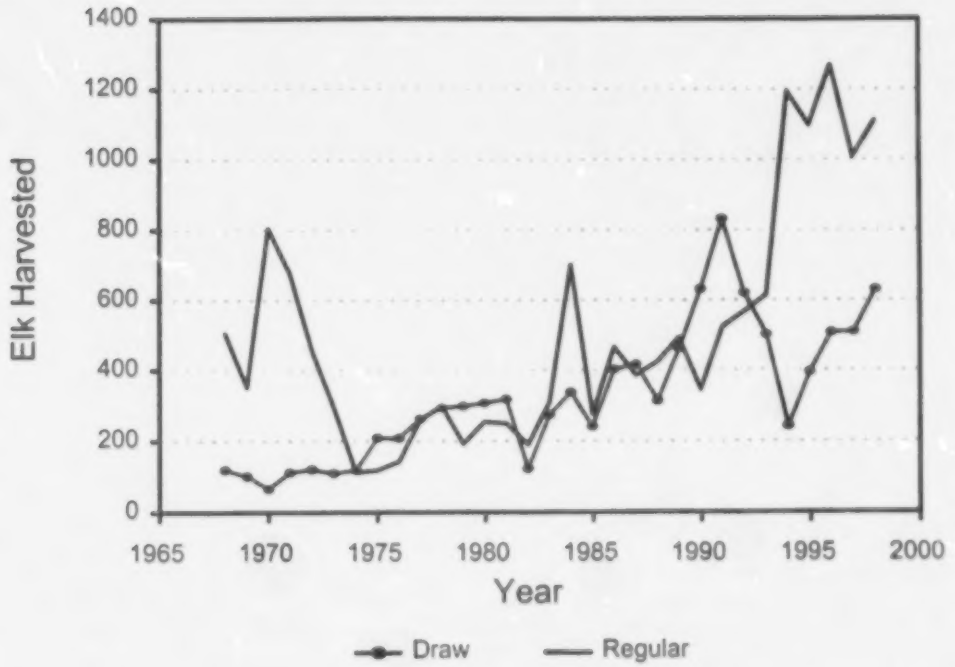

Figure 3. Trends in the elk harvest for regular and draw seasons, 1968-98

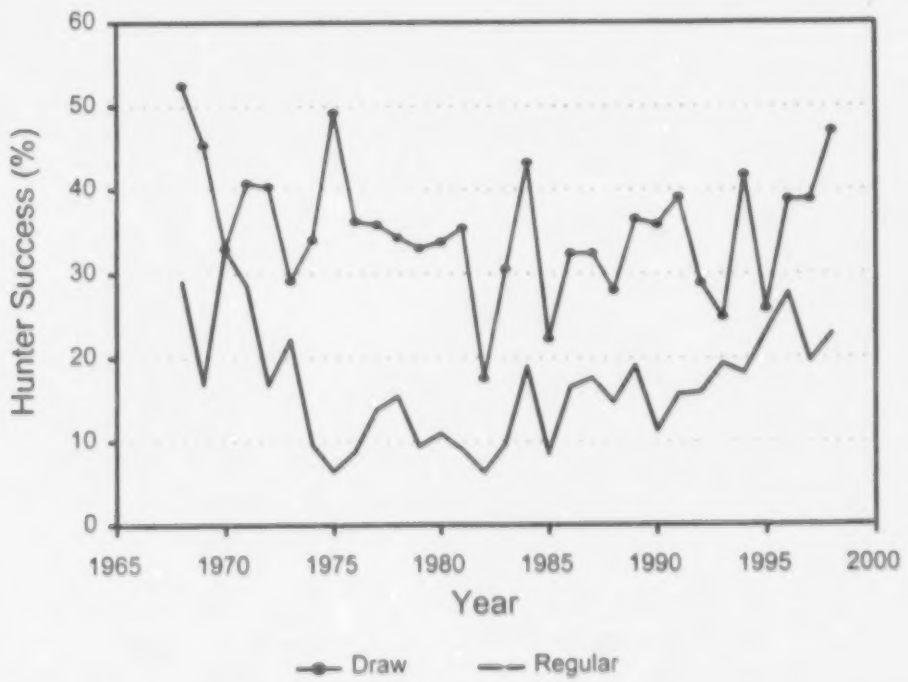

Figure 4. Trends in the hunter success rates for regular and draw seasons, 1968-98.

The Hunter Harvest Survey (General Appendix 2) results for the regular and draw seasons are summarized in Tables 7, 8 and 9.

Based on the Hunter Harvest Survey, hunter participation in the 1998 regular elk season (4,878 hunters) decreased 5.3% compared to 1997 (5,151 hunters), but was 6.2% larger than 1996 (4,594 hunters). The projected number of animals harvested by archers in the regular 1998 hunting season was 168 elk. This represented a hunter success rate of 28% (Table 7) compared to a harvest of 140 elk and success rate of 19% in 1997, and a harvest of 123 elk and success rate of 16% in 1996. The number of archers decreased to 592 in 1998 (Table 7), compared to 737 in 1997, 761 in 1996, and 742 in 1995. In the regular rifle season, the provincial harvest estimate of 943 elk in 1998 (Table 8) increased by 8.5% compared to 1997 (869 elk harvested), but was 16.8% less compared to 1996 (1,134 elk harvested). In WMZ 53 (November season), 88 hunters participated in the elk hunt, compared to 116 hunters in 1997, and 148 hunters in 1996.

Table 7. Estimated hunter success and harvest pressure during the elk regular archery seasons, 1998 (estimated from the Hunter Harvest Survey).

Ecozone and WMZ	# Actual Hunters	# Zone Hunters	Hunter Success (%)	Harvest	Harvest Structure Males:Females:Young	Hunter-days	Hunter-days/ Animal
Parkland							
47	11	16	0	0	0.00:1*:0.00	66	—
Total	11	16	0	0	0.00:1*:0.00	66	—
Forest Fringe							
48	158	203	35	55	38.00:1.*:17.00	839	15.3
49	136	175	32	44	3.00:1.00:0.00	905	20.6
50	30	38	17	5	5.00:1*:1.00	165	33.0
53	21	27	52	11	0.00:1.00:0.00	159	14.5
Total	345	444	33	115	3.45:1.00:0.77	2,068	18.0
Forest							
56	108	159	20	22	0.55:1.00:0.45	664	30.2
57	34	49	33	11	11.00:1*:0.00	126	11.5
58	4	5	100	4	4.00:1*:0.00	22	5.5
59	49	71	33	16	2.20:1.00:0.00	329	20.6
60	4	5	0	0	0.00:1*:0.00	22	—
62	11	16	0	0	0.00:1*:0.00	60	—
63	7	11	0	0	0.00:1*:0.00	88	—
64	4	5	0	0	0.00:1*:0.00	5	—
68S	7	11	0	0	0.00:1*:0.00	27	—
69	7	11	0	0	0.00:1*:0.00	77	—
Total	236	346	23	53	2.00:1.00:0.31	1,420	26.8
Provincial Total	592	806	28	168	2.84:1.00:0.58	3,554	21.2

Table 8. Estimated hunter success and harvest pressure during the elk regular rifle (Sept. 14 to 26 and Nov. 16 to 28) hunting seasons, 1998 (estimated from the Hunter Harvest Survey).

Ecozone Season Date and WMZ	# Actual Hunters	# Zone Hunters	% Hunter Success	Harvest	Harvest Structure Males:Females:Young	Hunter-days	Hunter-days/ Animal
Parkland - Sept. 14 -26 (Bulls-only)							
47	27	38	20	5	5.00:1*:0.00	214	39.0
Parkland Total	27	38	20	5	5.00:1*:0.00	214	39.0
Forest Fringe - Sept. 14-26							
48	863	1,130	20	175	175.00:1*:0.00	4,760	27.1
49	557	729	20	110	110.00:1*:0.00	2,775	25.3
50	159	208	28	44	44.00:1*:0.00	856	19.5
53	54	71	10	5	5.00:1*:0.00	247	45.0
Forest Fringe Total	1,634	2,139	20	334	334:1*:0.00	8,637	25.8
Forest - Sept. 14-26 (Bulls-only)							
56	1,012	1,294	22	219	219.00:1*:0.00	5,857	26.7
57	377	483	23	88	88.00:1*:0.00	2,117	24.1
58	60	77	18	11	11.00:1*:0.00	345	31.5
59	317	406	12	38	38.00:1*:0.00	1,528	39.7
60	17	22	0	0	0.00:1*:0.00	88	—
61	13	16	0	0	0.00:1*:0.00	66	—
62	64	82	9	5	5.00:1*:0.00	417	76.0
63	99	126	11	11	11.00:1*:0.00	444	40.5
64	34	44	48	16	16.00:1*:0.00	159	9.7
65	9	11	0	0	0.00:1*:0.00	38	—
66	26	33	0	0	0.00:1*:0.00	132	—
67	4	5	0	0	0.00:1*:0.00	16	—
68S	43	55	13	50	5.00:1*:0.00	208	38.0
69	47	60	0	0	0.00:1*:0.00	307	—
Forest Total	2,122	2,715	19	395	395.00:1*:0.00	11,719	29.7
Sept. 14-26 Bulls-only Total	3,784	4,892	19	735	735.00:1*:0.00	20,570	28.0
Forest Fringe Nov. 16-28							
53	88	132	44	38	0.00:1.00:0.40	488	12.7
Nov. 16-26 (Either-sex) Total	88	132	44	38	0.00:1.00:0.40	488	12.7
Provincial (Regular Rifle) Total	4,464	5,829	21	943	12.83:1.00:0.50	24,612	26.1

* No cows reported in the harvest.

Table 9. Estimated hunter success and harvest pressure during the draw elk rifle seasons, 1998 (based on Hunter Harvest Survey).

Ecozone Season Date and WMZ	# Actual Hunters	# Zone Hunters	% Hunter Success	Harvest	Harvest Structure Males:Females:Young	Hunter Days	Hunter Days/ Animal
EITHER-SEX							
6	90	90	48	43	1.17:1.00:0.00	487	11.2
7	81	81	42	34	2.00:1.00:0.33	404	12.0
33	27	27	61	16	1.00:1.00:1.00	111	6.8
37	63	64	42	26	0.60:1.00:0.20	288	11.0
42	74	75	36	27	1.00:1.00:0.50	354	13.2
43	71	73	63	45	0.57:1.00:0.29	231	5.2
50	89	89	42	38	1.20:1.00:0.00	351	9.8
52	26	26	88	23	2.50:1.00:0.00	124	5.4
Either-sex Total	525	529	49	257	1.09:1.00:0.22	2,459	9.6
NON-TROPHY							
37	35	35	67	23	0.00:1.00:1.00	111	4.8
GPA	a						
48	415	415	53	219	0.00:1.00:0.18	1,548	7.1
49	233	233	45	104	0.00:1.00:0.25	671	6.4
50	a						
Non-trophy Total	703	703	50	355	0.00:1.00:0.23	2,455	6.5
Draw Rifle Total	1,228	1,232	50	612	0.49:1.00:0.28	4,914	8.0

* No cows reported in the harvest.
a No data available

In WMZs with small quotas, draw season elk hunters were contacted by telephone to assess hunting and harvest activity; results of the telephone surveys (Table 10) are considered more accurate than estimates from the Hunter Harvest Survey.

Long-term elk harvest information for Moose Mountain Provincial Park are presented in Appendix 1. In recent years the reduction of the licence quotas reflected lower elk numbers resulting from unregulated hunting pressure in that area. Unregulated big game harvest by Treaty Indians, collected by Conservation Officers in the field to 1995, are presented in Appendix 2.

Table 10. Hunter success and harvest based on telephone survey interviews, draw seasons, 1998.

Elk Management Unit	WMZ	# Licences Issued	# of Active Hunters	Harvest					Harvest Ratio Males:Females:Young	Hunter Success (%)	Hunter-days	Hunter-days/ Animal
				Bulls	Cows	Calves	Unkn	Total				
EITHER-SEX												
Cypress Hills West Block *	7	101	100	16	14	3	0	33	1.14:1.00:0.21	33	—	—
Cypress Hills E C Blocks [b]	6	100	b	b	b	b	b	b	b	b	b	b
Moose Mountain Prov. Park [c]	33	27	26	6	8	3	0	17	0.75:1.00:0.37	65	123	7.2
Duck Mountain Prov. Park	37	41	41	6	6	1	0	13	1.00:1.00:0.17	32	218	16.8
Tiger Hills	42	79	79	18	10	2	0	30	1.87:1.00:0.20	38	—	—
FALC	43	72	72	15	24	4	0	43	0.61:1.00:0.17	59	—	—
	50	75	75	21	4	5	0	30	5.25:1.00:1.25	40	—	—
MacDowall *	52, 54	25	d	d	d	d	d	d	d	d	d	d
Greenwater Lake Prov Park	48	53	53	11	3	0	0	13	3.67:1.00:0.00	26	190	14.0
NON-TROPHY												
Duck Mtn. Prov. Park	37	59	55	0	14	6	0	20	0.00:100:0.43	37	224	11.2
Greenwater Lake Prov Park	48	52	52	0	11	1	0	12	0.00:1.*:0.09	24	167	13.9
WMZ 50	50	51	51	0	25	3	0	28	0.00:100:0.12	56	—	—

a Unregulated harvest was 38 elk.
b No phone survey conducted; known harvest was 14 bulls, 5 cows and 1 calf.
c See Appendix 1 for a summary of licenced harvest.
d No phone survey conducted.
* No cows reported in the harvest.

2.3.1.3 Elk Depredation Hunts

No depredation hunts were conducted in 1998/99.

2.4 Elk Relocation Program

On February 8-9, 1998, a total of 45 elk (6 adult cows, 4 yearling bulls, 3 yearling cows, 19 male calves, and 13 female calves) were relocated from Cypress Hills to Mile 30 farm at Cumberland House.

From January 8 - March 15 1999, a total of 340 elk were relocated from Elk Island National Park to an area near Wapus Lake in the Candle Lake/Cub Hills EMU. The 340 elk were consisted of 10 adult bulls, 49 yearling bulls, 80 adult cows, 24 yearling cows, 69 male calves, 49 female calves and 1 calf of unknown sex.

3.0 Management Objectives and Strategies

A comprehensive provincial elk management strategy was completed in July 1998 to provide long-term population objectives and strategies which promote sustainable use of wild elk throughout their range in Saskatchewan. This strategy establishes a basis upon which future elk management can be evaluated in Saskatchewan.

3.1 Northern Management Strategies

Because of the potential to over-harvest some of the forest elk herds, there was a bulls-only bag limit during both weeks of the regular elk season.

Non-trophy draw elk seasons used to control harvest (through quotas) on targeted elk herds was retained for 1998. It is important that population growth be stabilized on forest fringe elk herds in order to minimize crop damage concerns. Non-trophy draw seasons were opened near the end of November to improve hunter success at a time when there is a better chance for good snow conditions and increased access to some pastures that were previously closed to hunting (ie. Hazel Dell Pasture).

The elk allocation strategy in the northeastern WMZs (48, 49 and 56 to 59) is to maintain high quality elk hunting seasons with a focus on distributing hunter numbers to prevent overcrowding and to provide a measure of protection for mature, prime breeding bulls. Greenwater Lake Provincial Park will continue to be isolated in the Big Game Draw from surrounding WMZ 48 to reduce hunter crowding in this popular area. Hunters had the opportunity to apply for an early three week (September 9 to 26) either-sex hunt with a limited quota of 50 licences, or for a later (November 23 to 28) non-trophy season with a quota of 50 licences. These seasons were intended to assist with stabilizing the elk numbers in an area where elk

damage to crops and haystacks is a serious concern. In Greenwater Lake Provincial Park road and trail access restrictions were in effect during all big game seasons to protect the natural environment.

Horsehide Lake Wildlife Management Unit was open for **archery elk hunting only** during all open elk hunting seasons in WMZ 49. Some elk harvest pressure must be maintained in this area which is subject to significant elk crop damage.

The licence quota in Fort a La Corne Wildlife Management Unit remained at 75 either-sex licences due to habitat recovery following the severe 1995 forest fires. The draw non-trophy season in WMZ 50 (licence quota = 50), designated 50A (east of Highway No. 6 and Grid Road No. 692) was intended to increase harvest pressure on farmland dwelling elk where elk depredation is becoming a concern.

The elk population strategy includes maximizing elk herd growth in the forest and within the tolerance of landowners along the forest/agriculture interface.

The elk habitat management strategy includes continued purchase of prime elk habitat lands in agricultural areas under the Fish and Wildlife Development Fund and in partnership with the Saskatchewan Wildlife Federation and the Rocky Mountain Elk Foundation.

3.2 Southern Management Strategies

In WMZ 33, including Moose Mountain Provincial Park, the either-sex draw licence quota remained at 25 licences. Also, the season dates were structured to provide a quality elk hunting opportunity.

In WMZ 37, including Duck Mountain Provincial Park, the either-sex draw licence quota was increased from 30 to 40. The non-trophy draw season (licence quota = 60, including Duck Mountain Provincial Park) strategy was designed to maintain late season hunting pressure on farmland elk populations where elk damage to crops and haystacks is a concern.

4.0 Appendix

Appendix 1. Licensed elk harvest, Moose Mountain Provincial Park (WMZ 33), 1973-98.

Year	# Licences Issued	Harvest	% Hunter Success	Days/Elk	Hunter-days[b]
1973	151	72	48	—	—
1974	100	32	32	21.1	677
1975	150	80	53	13.4	1,072
1976	200	64	32	19.6	1,252
1977	200	73	37	11.0	801
1978	125	59	47	7.8	467
1979	125	72	58	5.4	390
1980[a]	125	58	50	11.5	665
1981	125	55	47	5.5	366
1982	125	54	46	9.3	505
1983	200	108	57	4.1	440
1984	100	57	57	5.2	298
1985	100	40	39	8.7	365
1986	100	54	56	6.6	359
1987	100	56	56	5.3	301
1988	100	57	59	5.5	314
1989	100	58	59	6.2	359
1990	81	39	48	7.2	282
1991	79	31	40	8.5	262
1992	50	13	26	10.5	221
1993	51	22	44	7.9	173
1994	52	26	55	6.4	167
1995	52	21	40	11.0	222
1996	25	13	52	8.5	111
1997	28	17	61	8.6	147
1998	27	17	65	7.2	123

[a] Prior to 1980, statistics are based on hunter questionnaires; after 1980 a telephone survey was used to obtain data.
[b] Archery, muzzleloader and rifle seasons pooled.

5.0 Literature Cited

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Moose *(Alces alces)*

by Rhys Beaulieau and A.A. Arsenault

1.0 Long-term Management Objectives

- To maintain stable wintering populations in all Moose Management Units (MMUs) to attain a provincial winter population of 50,500 ±20%.
- To maintain the winter population structure >35 bulls/100 cows/>35 calves in all MMUs per Arsenault (2000).
- To retain 107,600 km² of occupied primary moose habitat.
- Once conservation needs are met, to provide priority allocation for subsistence food needs.
- To obtain the informed consent of all potentially affected interests in structuring area specific population objectives, management strategies and regulations.

2.0 Population Status

2.1 Provincial Overview

The 1998/99 winter moose population was near it's long-term average of 46,700 moose, which is within the long-term winter objective of about 50,500 ±20% moose (Figure 1).

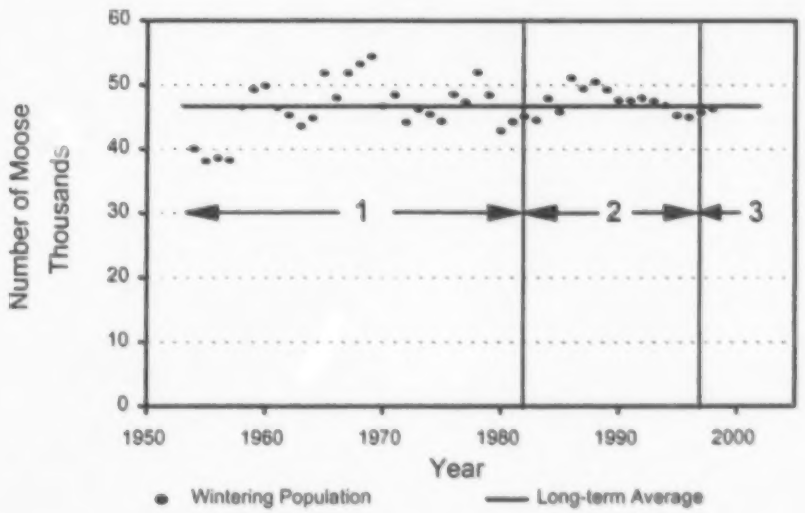

Figure 1. Changes in winter moose population in Saskatchewan, 1954 to present (Data in area 1 were primarily collected using a line transect survey method. Area 2 represents data collected primarily by quadrat surveys stratified by habitat type. Area 3 represents data collected using a modified Gasaway survey method).

2.1.1 Population Size/Density Surveys

Meadow Lake Provincial Park was surveyed in January 1999. The modified Gasaway (Gasaway et al. 1986, Lynch and Shumaker 1995) survey was funded by Wascana Energy. The survey estimated the population density at 0.29 moose/km² ±29.8% (Table 1). The estimated total population for the survey area (1526 km²) was 447 ±133 moose. No other moose aerial surveys were conducted in 1998/99.

Table 1. Moose population objectives and survey block densities based on aerial survey sampling.

Moose Management Unit (MMU)	WMZs	Estimated Winter Population Size		Survey Area (km²)	Survey Estimated Moose Population Density ±95% CL		
		Long Term Objective	1998/99 Estimate [a]		1996/97	1997/98	1998/99
Cypress Hills	6, 7	325	312				
Kindersley	25 - 27	150	110				
Moose Mountain	33	350	387	684		0.40 ±8%	
Eastern Qu'Appelle	35	30	29				
Duck Mountain	37	350	319	469		0.45 ±8%	
Parkerview/Good Spirit	39	75	75				
Barrier Valley	40, 42	400	431				
Sonningdale	45	90	86				
MacDowall Forest	51, 52	145	146				
Fort a la Corne	43, 50	750	767	1,401			
Porcupine Hills	48, 56, 57	5,500	5,419	3,605	0.78 ±17%	0.65 ±18%	
Pasquia Hills	49, 58, 59	5,000	4,840	4,492			
Cumberland Delta	60-62	5,500	3,144	9,675		0.24 ±20%	
Candle Lake/Cub Hills	63-65	4,000	3,955	2,421			
Sled lake/PANP	66, PANP	3,500	2,754	2,666		0.03	
Bronson Forest	47, 68S, 68N	2,100	1,601	3,418			
Divide Forest	53, 55, 67	4,900	4,482	3,385	0.28 ±21%	0.40 ±20%	
Thickwood Hills	54	750	818				
Meadow Lake/PAWR	69, PAWR	3,000	3,408	1,526			0.29 ±29%
Creighton	70	850	725	664			
Churchill	71-73	6,000	6,004				
Boreal Shield	74-76	6,500	6,482				
Total		50,265	46,293				

2.1.2 Population Structure Surveys

The Meadow Lake Provincial Park survey revealed a population structure consisting of 43 bulls/100 cows/ 51 calves (Table 2).

Table 2. Aerial survey results of winter herd structure.

Moose Management Unit (MMU)	WMZs	Long-term Objective Bull:Cow:Calf	1996/97 Bull:Cow:Calf	n	1997/98 Bull:Cow:Calf	n	1998/99 Bull:Cow:Calf	n
Cypress Hills	6, 7	0.35:1.00:>0.35						
Kindersley	25 - 27	0.82:1.00:>0.35			0.71:1.00:0.66	90		
Moose Mountain	33	0.48:1.00:>0.35			0.49:1.00:0.42	380		
Eastern Qu'Appelle	35	0.98:1.00:>0.35						
Duck Mountain	37	0.40:1.00:>0.35			0.43:1.00:0.30	263		
Parkerview/Good Spirit	39	0.98:1.00:>0.35						
Barrier Valley	40, 42	0.59:1.00:>0.35						
Sonningdale	45	0.59:1.00:>0.35						
MacDowall Forest	51, 52	0.53:1.00:>0.35						
Fort a la Corne	43, 50	0.67:1.00:>0.35						
Porcupine Hills	48, 56, 57	0.38:1.00:>0.35	0.17:1.00:0.40	310	0.22:1.00:0.52	322		
Pasquia Hills	49, 58, 59	0.36:1.00:>0.35						
Cumberland Delta	60-62	0.43:1.00:>0.35			0.40:1.00:0.34	333		
Candle Lake/Cub Hills	63-65	0.52:1.00:>0.35						
Sled lake/PANP	66, PANP	0.68:1.00:>0.35						
Bronson Forest	47, 68S, 68N	0.40:1.00:>0.35						
Divide Forest	53, 55, 67	0.40:1.00:>0.35			0.35:1.00:0.34	266		
Thickwood Hills	54	0.51:1.00:>0.35						
Meadow Lake/PAWR	69, PAWR	0.64:1.00:>0.35					0.43:1.00:0.51	130
Creighton	70	0.89:1.00:>0.35						
Churchill	71-73	0.82:1.00:>0.35						
Boreal Shield	74-76	1.00:1.00:>0.35						

2.2 Biological Data Collection

2.2.1 Age Structure of Harvested Animals

Tooth samples were collected at several check stations in the commercial forest and through officer contact with hunters. Over the past three years, tooth samples were collected from <15% of the moose harvest, compared to >30% annually during the late 1980's. Sample sizes are very small for most zones. Table 3 summarizes the cementum age structure of harvested moose for the past 3 years.

Table 3. Summary of cementum age classes of harvested moose, 1996 - 1998 hunting seasons

	1996		1997		1998	
Age Class	Male	Female	Male	Female	Male	Female
0.5	60	62	37	32	50	47
1.5	42	15	61	21	78	6
2.5	62	21	43	12	61	8
3.5	49	5	32	8	42	6
4.5	19	6	27	6	25	6
5.5	14	4	16	5	9	4
6.5	3	2	8	3	12	2
7.5	7	2	5	1	3	1
8.5	0	5	2	0	2	1
9.5	1	3	2	2	0	2
10.5	1	0	1	1	3	0
11.5	2	2	0	2	1	0
12.5	0	0	2	1	1	0
13.5	0	0	1	1	0	0
14.5	0	0	0	0	0	0
15.5	0	0	0	0	0	0
>15.5	0	0	0	0	0	0
Total	260	127	237	95	287	83
Mean age of ≥2.5 year old animals	3.82	4.82	4.34	5.19	3.99	4.60

Table 4 summarizes the age information from samples collected at checking stations with about 70% of the samples from WMZs 56 - 59. Mean age of the provincial bull harvest (1878 - 1998) has remained relatively unchanged at about 4 years. The mean age of harvested cows is higher than for bulls (Table 4). The differences between mean age of harvested cows versus harvested bulls is a strong indication that the current management system is conserving mature cows. Removing hunting pressure from the

cows has resulted in a very strong productive cow segment of the moose population.

Table 4. Mean age of adult (2½ years or older) animals from check stations and comparison of 1½ - 3½ year old males to mature males, 1978-98. The NE WMZs refer to WMZs 56 - 59 inclusive.

Year	Mean Age				Comparison of Bulls (Provincial)	
	Cows (Provincial)	Cows (NE WMZs)	Bulls (Provincial)	Bulls (NE WMZs)	Harvested Bulls 1.5-3.5 yrs old	Harvested Bulls >3.5 yrs old
1978	na	na	na	na	72%	28%
1979	5.10	na	4.30	na	73%	27%
1980	6.20	na	4.60	na	61%	39%
1981	5.60	na	4.50	na	64%	36%
1982	5.60	na	4.80	na	63%	37%
1983	5.50	na	4.60	na	74%	26%
1984	6.20	na	4.50	na	69%	31%
1985	5.80	5.50	4.20	4.40	74%	26%
1986	5.70	5.10	4.10	4.00	77%	23%
1987	6.10	5.70	4.20	3.90	79%	26%
1988	5.40	5.40	3.90	3.70	79%	21%
1989	5.40	5.90	4.10	4.00	74%	26%
1990	5.20	4.90	4.10	3.80	76%	24%
1991	5.40	na	4.20	na	76%	24%
1992	6.00	na	3.90	na	81%	19%
1993	6.00	6.00	3.90	3.90	83%	17%
1994	6.30	6.00	4.20	3.80	80%	20%
1995	6.40	6.10	3.80	3.50	85%	15%
1996	4.82	4.60	3.82	3.62	77%	23%
1997	5.19	5.00	4.34	4.00	68%	32%
1998	4.60	4.44	3.99	3.97	76%	24%

Table 4 compares the mean age of moose harvested in the northeast WMZs (56 through 59) to the provincial moose harvest. Although the mean age of the provincial and northeast is some what variable for the past 14 years there is no trend indicating that neither the provincial or northeast shows any trend to a younger population.

2.3 Mortality

2.3.1 Moose Tick *(Dermacentus albipictus)* Index

No moose hides were examined for tick loads in 1998/99. There were reports of heavy mortality of moose in the Duck Mountain area of Manitoba (as high as 25% of the population), and in parts of Alberta, but no unusual losses were reported in Saskatchewan due to the winter tick. The very early 1998 spring (early than normal snow loss, warm temperatures) resulted in a prediction that tick production in Saskatchewan would be very high, and would result in a large moose tick load during the 1998-99 winter, resulting in significant moose mortality by the spring of 1999. Field reports indicate that this did not occur. In general, 1999 spring conditions throughout much of the moose range in Saskatchewan probably resulted in high tick production and therefore loss of moose in the spring of 2000 is possible.

2.3.2 Review of the 1998 Hunting Seasons

2.3.2.1 Licence Sales

Total licence sales increased 10% from 8,622 in 1997 to 9,518 in 1998 (Table 5). The number of regular licences increased by 25% and the draw licences decreased by 48% when compared to 1997. The drop in the draw quotas and subsequent licence sales was in reaction to the 1997-98 Porcupine Forest survey which indicated a declining population. In 1998, Metis hunters were required to buy hunting licences, and is likely the main reason for the increase in regular moose licence sales. During the two previous years Metis hunters had similar hunting rights as Treaty Indians. The increase in regular licence sales is also a result of draw quota restrictions.

Table 5. Provincial moose licence sales, 1995 - 1998.

	1995	1996*	1997	1998	% Change From 1997
Draw	2,050	2,082	1,717	901	-48%
Bull-calf	9,802	8,255	6,668	8,368	25%
Guided	291	230	237	249	5%
Total	12,143	10,580	8,622	9,518	10%

all licence sales represent sale figures as of March 31, 1999.

2.3.2.2 Hunting Activity and Harvest

The total 1998 provincial harvest of 3,108 moose was less than the 1977-1998 average harvest of 3,460 moose, but up 30% when compared to 1997 (Table 6). The 1998 Hunter Harvest Survey result indicated that there were 8% more moose hunters in Saskatchewan compared to 1997 (Table 6, Figure 2). The largest increase in hunter numbers (20%) occurred on the east side (WMZs 56 - 59), and was similar to that of 1996. This increase may be a result of several factors including a licence requirement for Metis hunters, good hunting conditions, and early grain harvest which allowed more of the farming community to hunt. Saskatchewan resident hunters harvested 30% more moose in 1998 compared to 1997 (Table 6, Figure 2). Total hunter-days stayed the same as in 1997 but the number of days to harvest a moose dropped from 19.0 in 1997 to 14.7 in 1998 indicating good hunting conditions and good moose populations in most parts of the province (Table 6, Figure 3). The long term average for hunter-days/moose is approximately 15 days. Table 7 summarizes the moose harvest by licence type, 1995-98. Appendix 1 and 2 summarize annual harvest and success by WMZ for the draw (either-sex) and regular (bull -calf) seasons, respectively.

Table 6. Comparison of resident hunter harvest and success, 1995-1998.

	Season	1995	1996	1997	1998	% Change from 1997
Number of Hunters	Early regular bull-calf	4,335	4,254	3,750	5,157	38%
	Late regular bull-calf	6,367	4,429	4,120	4,591	11%
	Early draw	995	1,197	1,069	497	-54%
	Late draw	1,379	1,238	1,056	579	-45%
Moose Harvest	Early regular bull-calf	1,327	1,045	853	1,426	67%
	Late regular bull-calf	2,598	1,220	711	1,156	63%
	Early draw	384	352	352	164	-53%
	Late draw	815	601	477	362	-24%
Hunter Success (%)	Early regular bull-calf	31	24	23	28	22%
	Late regular bull-calf	41	28	17	25	47%
	Early draw	38	32	33	33	0%
	Late draw	59	49	45	63	40%
Total Resident	Number of Hunters	13,077	11,119	9,995	10,827	8%
	Moose Harvest	5,124	3,248	2,393	3,108	30%
	Hunter Success (%)	39	29	24	29	21%
	Hunter-days	56,561	50,132	45,432	45,643	0%
	Hunter-days/Moose	11	15	19	15	-23%

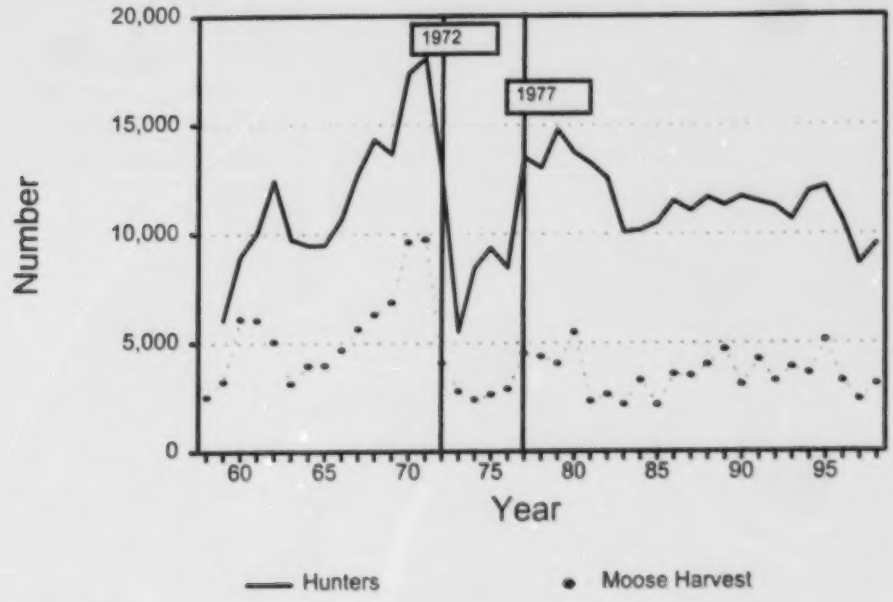

Figure 2. Number of moose hunters and harvest, 1958-98 (1972 - beginning of quota restrictions; 1977 - beginning of Moose Management Program).

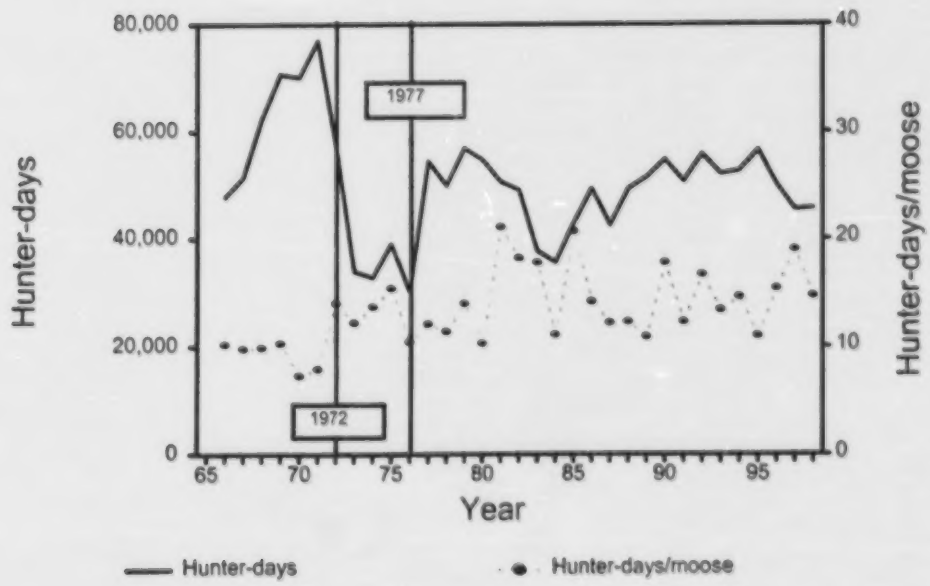

Figure 3. Total moose hunter-days and hunter-days/moose, 1966-98 (1972 - beginning of quota restrictions; 1977 - beginning of Moose Management Program).

Table 7. Moose harvest by licence type, 1994-98.

LicenceType	Moose Harvest				
	1994	1995	1996	1997	1998
Draw (Either sex)	1,121	1,199	985	829	526
Regular (Bull-calf)	2,480	3,925	2,265	1,564	2,582
Guided (Bull-calf)	113*	61	67	90	122
Total Harvest	3,601	5,124	3,248	2,393	3,108
Sask. Resident Hunter Success (%)	33	39	29	24	29

* Estimated by multiplying total guided licence sales by the average Sask. resident hunter success rate (draw and regular seasons pooled). Estimate is not included calculation of total harvest or hunter success rates.

The low adult sex ratio on the east side of province is a concern because of possible limitations on effective reproduction, and because the ratio does not reflect that of a natural population. Survey data reveals that calf survival to mid-winter is high and therefore calf production has remained high. To address the concerns of low bull numbers, season adjustments were made in 1997.

The early regular season was delayed by one week in 1997 to reduce harvest pressure on bulls. The proportion of bulls harvested during the early regular seasons 1997 (67%) and 1998 (65%) were lower than the long term average (1984-1998) of 77% (Table 8). This suggests that delaying the early regular season has reduced the proportion of bulls harvested. Traditionally the bull harvest was larger in the late regular season compared to the early regular season (Table 8). However, the reverse has been the case for the past three years(1996-1998) because more hunters hunted during the early regular seasons in those years.

In 1997, the late regular season was reduced from two weeks to one week on the east side of the province (WMZs 48,49,56 to 59) to coincide with the rest of the province. This change was brought about to reduce the hunting pressure on the east side. No effect on late regular harvest or hunter numbers was detected in 1998 resulting from this change.

The number of draw licences available in WMZs 48,49, 56-59 was reduced from 1,100 in 1997 to 275 in 1998 in response to population survey results in the Porcupine Forest which indicated a decline in population density. Based on the Hunter Harvest Survey results, the number of draw hunters in the northern commercial forest (WMZs 56-67) declined in 1998 (662 hunters) compared to 1997(1,800 hunters). Harvest from WMZs 56-67 declined in 1998 (357 moose) compared to 1997 (648 moose)(Appendix 1), but hunter success increased in 1998 (54%) compared to 1997 (36%).

The number of regular (bull-calf) season hunters increased in the Forest (WMZs 56-73) and Shield (WMZs 74-76) ecozones from 6,635 in 1997 to 8,306 in 1998. The moose harvest increased from 1,210 in 1997 to 2,096 in 1998 with success rates also increasing from 18% to 25% (Appendix 2). In the Parkland (WMZs 31-47) and Forest Fringe (WMZs 48-55) ecozones, 1,232 hunters harvested 353 moose for a hunter success rate of 27% during 1997, compare to 1998 when 1,429 hunters harvested 487 moose for a success rate of 34%.

Table 8. Comparison of moose harvest in the early vs late regular rifle seasons, 1984 -1998.

Year	Early Regular Season				Late Regular Season			
	Season Dates	Total Harvest (bulls +calves)	Bull Harvest		Season Dates	Total Harvest (bulls + calves)	Bull Harvest	
			Number	%			Number	%
1984	Oct. 8-13	415	357	86	Nov. 19 -Dec. 1	1,626	1,040	64
1985	Oct. 7-12	345	259	75	Nov. 18-30	890	543	61
1986	Oct. 6-11	841	681	81	Nov. 17-29	1,443	909	63
1987	Oct. 5-10	a	a	a	Nov. 16-28	a	a	a
1988	Oct. 3-8	a	a	a	Nov. 21-Dec. 3	a	a	a
1989	Oct. 2-7	1,398	1,104	79	Nov. 20-Dec. 2	1,846	1,052	57
1990	Oct. 8-13	741	548	74	Nov. 19-Dec. 1	1,307	836	54
1991	Oct. 7-12	1,154	762	66	Nov. 18-30	1,667	984	59
1992	Oct. 5-10	892	723	81	Nov. 16-28	1,134	624	55
1993	Oct. 4-9	924	739	80	Nov. 15-27	1,552	885	57
1994	Oct. 3-8	823	700	85	Nov. 14-26	1,613	903	56
1995	Oct. 2-7	1,237	1,014	82	Nov. 13-25	2,565	1,513	59
1996	Oct. 7-12	979	832	85	Nov. 18-30	1,220	610	50
1997	Oct. 13-18	778	524	67	Nov. 17-22	727	378	52
1998	Oct 12-17	1,210	783	65	Nov. 16-21	1,204	680	56
Average		903	694	77		1,446	843	58

a Data could not be broken into seasons.

Harvest success rate for Cypress Hills (WMZ 6) in 1998 was very similar to 1997 (Table 9). In the Thickwood Hills (WMZ 54), hunting conditions in 1998 were similar to that of 1997, which included very little snow which made for tough hunting. Comments from the Thickwood Hills hunters included suggestions to change the draw to a bull-calf season, some hunters did not see any bulls, and some commented that the cows were not accompanied by calves. There were also complaints concerning the amount of posted land. The success rate is down form the previous years (Table 9) but still indicates a good moose population. In Fort a la Corne WMU (WMZ 50), the season dates were changed in 1991 to hunt in the rut with the hopes of killing a higher proportion of bulls. Since that time with the exception of 1996 over 50% of the harvest has been bulls (Table 10). In 1998, 84% of the Fort a la Corne moose harvest was composed of bulls. These data (Table 9 and 10) should be interpreted with caution since they are based on small sample sizes from the Hunter Harvest Survey. In Duck Mountain Park (WMZ 37), the hunter success rate similar to previous years.

There are some limitations with respect to the usefulness of Hunter Harvest Survey data obtained for archery and muzzleloader hunting activity and harvest due to small sample sizes and low Hunter Harvest Survey questionnaire return rates. Results of the Hunter Harvest Survey suggest that 637 archers harvested 167 moose for a success rate of 26% during the regular archery season, and 15 archers harvested 6 moose for a success rate of 40% during the draw archery season. The number of regular archery season hunters is higher than in 1996 (420 archers) and 1997 (536 archers). The reader should interpret these data with caution because of sample bias.

To hunt during the muzzleloader season a hunter must hold a draw licence. The sample size is very small, 74 hunters harvested 12 moose of a success rate of 17% percent. About half of the interest for hunting with a muzzleloader occurred in Duck Mountain Park (WMZ 37).

Table 9. Hunter survey results of draw seasons in the Southern WMZs, 1996 and 1998.

Area	WMZ	Year	Licence Quota	Active Hunters	Harvest				Hunter Success (%)
					Bulls	Cows	Calves	Total	
Cypress Hills Prov. Park (Telephone survey)	6	1998	51	49	26	15	2	43	88
		1997	50	40	15	11	6	40	80
		1996	50	51	14	18	7	39	78
Thickwood Hills (Telephone survey)	54	1998	50	49	14	18	4	36	74
		1997	50	50	24	7	10	41	82
		1996	50	50	10	25	12	47	94
Fort a la Corne WMU (Hunter Harvest Survey)	50	1998	50	50	16	0	3	19	38
		1997	50	50	18	2	4	24	48
		1996	50	50	6	5	8	19	38
Duck Mountain Prov. Park (Hunter Harvest Survey)	37	1998	100	100	14	14	14	42	42
		1997	100	100	18	18	12	48	48
		1996	100	100	12	32	0	42	42

Table 10. Summary of the Fort a la Corne WMU harvest structure, 1987-1998.

Year	Harvest Structure (%)		
	Bulls	Cows	Calves
1987	48	45	7
1988	46	46	8
1989	45	44	11
1990	41	53	6
1991	55	34	10
1992	62	27	11
1993	58	35	6
1994	71	29	0
1995	62	24	14
1996	31	26	42
1997	75	8	17
1998	84	0	16

2.3.2.3 Harvest Structure

The proportion of cows in the total provincial harvest (Table 11) is lower than previous years because of draw quota reductions on the east side of the province. In 1992 the early draw season was delayed to hunt closer to the rut as a means of providing a more quality hunt for resident hunters, and to reduce hunting pressure on cows. After the change was made, the bull harvest from the early draw season increased to about 50% of total harvest for that season, which was slightly higher than for years prior to 1992 (Table 12).

Table 11. Provincial moose harvest structure[a], 1995-1998.

Ecozone	1995 Bulls:Cows:Calves	1996 Bulls:Cows:Calves	1997 Bulls:Cows:Calves	1998 Bulls:Cows:Calves
Grassland	2.67:1:0.67	0.60:1:0.20	1.85:1:0.61	1.67:1:0.17
Farmland	—	—	—	—
Parkland	2.25:1:0.25	0.95:1:0.29	1.42:1:1.12	2.76:1:1.24
Forest Fringe	2.91:1:2.04	1.34:1:1.78	1.55:1:1.56	4.20:1:4.30
Forest	9.53:1:4.27	6.80:1:2.57	5.2:1:2.56	10.2:1:5.30
Shield	25.00:0:0.00	27.0:0:0.00	29.0:0:0.00	27.0:0:5.00
Provincial Total	4.05:1:2.94	2.58:1:1.78	3.40:1:1.97	7.35:1:4.28
Provincial (%)	61%:10%:29%	56%:16%:28%	53%:16%:31%	58%:8%:34%
Forest only (%)	64%:7%:29%	66%:10%:25%	60%:11%:29%	62%:6%:32%

[a]Includes both bull-calf and draw seasons, but not guided moose licences.

Table 12. Provincial harvest structure for the early draw season, 1984 - 1998.

Year	% Bulls	% Cows	% Calves
1984	61	27	11
1985	56	35	8
1986	55	36	8
1987	—	—	—
1988	—	—	—
1989	28	56	16
1990	44	40	15
1991	17	62	21
1992	49	32	19
1993	57	38	5
1994	57	36	7
1995	49	38	13
1996	41	47	12
1997	49	36	15
1998	51	43	6

2.4 Population Status by Moose Management Unit

Porcupine Hills (WMZ 48, 56 and 57)

- The 1997-98 Saskatchewan Game Management report lists a number of concerns relating to the moose population in the Porcupine Forest (WMZs 56,57). The surveys used to calculate populations pointed to a population decline. In 1998, the moose harvest in the Porcupine Forest represented over 30% of the regular season harvest, as in the past, making it the most important area for licenced Saskatchewan moose hunters. The harvest indicates that there is still a very good population in the Porcupine Forest. It is very evident that the decline in harvest in 1997 was due to harvest conditions and not population numbers (Appendix 3). Mean age of bulls has not changed in the last 14 years indicating that the percentage of mature bulls in the population has remained unchanged.
- No recent information is available for Greenwater Lake Provincial Park (WMZ 48). Field staff report stable populations, which probably follow a similar trend as the Porcupine Forest.

Pasquia Hills (WMZs 49, 58 and 59)

- Status is unknown. This moose population should be evaluated in the very near future.

West Side (WMZs 47, 68S, 68N. 53, 67 and 69)

- The survey conducted in Meadow Lake Provincial Park (WMZ 69) estimated a winter population density of 0.29 moose/km^2. This is lower than moose densities in the Divide(WMZ 67, 55, 53) and Bronson (WMZs 68N, 68S, 47) forests, and may be a function of habitat. The Meadow Lake Provincial Park is a mainly a large mature aspen stand and may not be providing adequate browse to support a higher density of moose. Moose harvest on the west side remain similar to past years indicating stable moose populations.
- Of concern is the moose harvest in WMZ 68N. It is very clear that WMZ 68N has become a very exclusive moose hunting area for those hunters who can access it. The very high success rate in the regular rifle season of 67% indicates a very good moose population but the small number of hunters (193) indicates an exclusive hunt. Habitat conditions in the Bronson Forest (WMZ 68S) remain unchanged. Drought and overgrazing continues to limit the potential of the area to produce moose and other big game species.

Cumberland Delta (WMZs 60 and 61)

- Sport harvest in 1998 (WMZs 60 and 61) was 26 moose, compared to 1969 when 1,650 moose were killed by sport hunters.
- The Cumberland moose population has shown no sign of recovery. Predators, habitat conditions, over hunting, and other factors are likely causes of this depressed population.
- A moose management committee has been established in Cumberland House to draft and evaluate proposals which might improve moose populations

Central Saskatchewan (WMZs 63 - 66)

- There is no recent survey information available. The road closure program is decreasing unregulated hunting thereby improving cow survival which is intended to improve the moose population.

Far North (WMZs 71 - 76)

- Field reports indicate a stable population, sport hunting remains unchanged at a very low level.

Cypress Hills Provincial Park (WMZs 6 and 7)

- The Cypress Hills moose population from field reports and past surveys appears to be in good health. The 1998 harvest was similar to past years.

Fort a la Corne Wildlife Management Unit (WMZ 50)

- No recent surveys were flown in Fort a la Corne and no other information was available to assess population status. Extensive forest fires in 1995 in approximately 25% of the WMU may have initially negatively impacted the population (increased access, loss of habitat) but moose should now be responding to the large amounts of browse created.

Moose Mountain Prov. Park (WMZ 33)

- The 1997/98 survey revealed that this moose population has increased from the 1991/92 survey. Calf survival is good at 42 calves/100 cows but the number of bulls might be considered low (49 bulls/100 cows) when one considers that this population is not being hunted by sport hunters. No additional information is available for 1998-99.

Duck Mountain Provincial Park (WMZ 37)

- The Duck Mountain survey in 1997/98 points to a stable population if comparison is made to the last survey in 1986/87. There was no significant change in harvest by licenced hunters compared to previous years.

Thickwood Hills (WMZ 54)

- No surveys were conducted in 1998/99, but field staff believed that the population is stable. High hunter success in 1998 supports this conclusion. Comments from hunters range from "no bulls", to "no cows", to "having a draw season for bulls only".

Barrier Valley (WMZs 40 and 42)

- No survey information is available for this population. Residents and SERM staff indicate a strong population.

3.0 Management Objectives and Strategies

3.1 Northern Management Strategies

- Early and late regular seasons will be retained for 1999, moving one day because of the calender. The early regular season was delayed one week in 1997 to avoid the rut and conserve bulls in the Porcupine Forest (WMZs 56 and 57). Harvest data indicated that this action had the desired effect. As in the past, the same opening date was maintained across the province to avoid increasing hunting pressure in some zones.

- Quotas on the east side of Saskatchewan, remain unchanged for 1999. In 1998, quotas were reduced because of the concern with lower moose populations as indicated by surveys.

- No allocation change is recommended for the Divide (WMZ 67) and Bronson (WMZ 68S) forests until population density.

- The 1999 guided moose season in all zones, with the exception of WMZs 60 to 62 and 69, will be similar to 1998, moving one day because of the calender adjustment. In WMZs 60 to 62 and 69, the season will be delayed one week because of the calender roll back. This date was negotiated with the outfitting industry and will result in guided hunters in zones 60, 61, 62 and 69 hunting one week earlier than licenced resident hunters.

- The 1999 either-sex archery season for residents and guided moose hunters will continue in all WMZs where a bull-calf season occurs.

- The early draw season will continue to occur during the rut, as been the case since 1992. Hunting during the rut with a very limited number of licences has not changed the harvest structure and hunters like the high quality hunting opportunity.

3.2 Southern Management Strategies

- Moose Mountain Provincial Park (WMZ 33) - The 1997/98 survey indicates that the moose population has started to recover. SERM will start to look at a management plan for moose in the park with all user groups (First Nations, recreational hunters, landowners, park users, etc.).

- Cypress Hills Provincial Park (WMZs 6 and 7) - In response to the good moose population, the quota for 1999 will be increased from 50 to 60. An archery and muzzleloader season will be added to increase hunting opportunity.

- Thickwood Hills (WMZ 54) - The 1998 harvest data indicates a stable population although some concern was raised by local people and sportsmen. The 1999 quota remains unchanged at 50 licences.

- Fort a la Corne Wildlife Management Unit (WMZ 50) - Due to the impact of the forest fires within the WMU in 1995 and the uncertainty of the impact it may have had on the moose population, the 1998 quota remains at 50 licences (quota was reduced from 100 to 50 in 1995). Work will be carried out in 1999/2000 to determine if burnt areas are supporting moose.

- Duck Mountain Provincial Park (WMZ 37) - The 1997/98 population survey indicated a stable population, which seems capable of handling existing harvest. The quota will remain at 100.

- Greenwater Lake Provincial Park (WMZ 56) - Season structure and draw quota (50 licences) will remain the same.

- Combined zones 40 and 42 the Barrier Valley - Local sportsmen and SERM Staff indicate that the moose population can handle additional hunting pressure. In 1999 the quota will be increased from 25 to 50.

4.0 Appendix

Appendix 1. Draw season moose harvest, 1995-1998.

	Harvest				Hunter Success (%)			
WMZ	1995	1996	1997	1998	1995	1996	1997	1998
6	36	42	39	38	77	82	83	86
37	43	42	48	43	42	41	40	36
40	—	0	20	25	—	0	75	61
47	104	98	—	—	68	62	—	—
48,49 and 56	301	221	253	97	56	43	44	48
50	28	19	24	19	45	32	39	29
54 a	22	48	33	35	46	96	66	70
57	136	100	92	38	57	45	35	62
58	98	30	44	25	45	15	19	35
59	203	134	151	53	59	36	40	63
60	—	—	—	—	—	—	—	—
61	—	—	—	—	—	—	—	—
62	19	0	18	32	31	0	29	54
63	15	8	15	34	33	10	22	51
64	0	27	24	10	0	52	31	12
65	13	23	12	21	43	5	33	39
66	47	37	39	47	48	26	29	47
67	108	103	—	—	40	36	—	—
Total	1,173	932	812	517	50	38	39	47

Appendix 2. Harvest and hunter success for the regular (bull-calf) moose seasons, 1995-1998.

	Harvest				Hunter Success (%)			
WMZ	1995	1996	1997	1998	1995	1996	1997	1998
43	33	16	16	33	73	100	64	67
47	16	11	8	16	100	100	47	61
48	270	158	145	178	64	35	29	34
49	287	169	116	157	57	39	25	29
50	16	21	4	10	23	52	8	14
53	58	38	25	54	78	57	34	49
54	—	—	—	—	—	—	—	—
55	41	44	37	32	38	72	33	39
56	901	399	307	502	37	20	19	26
57	525	268	166	297	38	23	18	27
58	66	54	8	38	26	24	4	21
59	671	415	171	356	35	27	13	22
60	57	33	24	21	16	18	14	17
61	49	16	4	5	55	48	8	8
62	41	16	12	27	29	24	10	27
63	58	43	16	38	22	22	11	17
64	41	21	12	22	39	15	13	14
65	16	27	8	38	20	32	16	28
66	82	76	62	54	31	25	27	16
67	320	196	220	297	28	23	24	26
68N a	90	16	75	152	50	33	29	63
68S a	41	60		43	55	28		42
69	123	81	58	102	41	36	21	25
70	32	27	12	22	17	22	10	20
71	0	16	4	11	0	41	13	28
72	24	0	4	10	46	0	12	22
73	8	5	12	27	15	21	20	19
74	8	16	21	16	4	48	48	37
75	8	5	0	16	8	36	0	64
76	8	5	8	0	8	33	50	0
Total	3,890	2,252	1,555	2,569	37	26	20	26

a In 1995, WMZ 68 was split into 68N and 68S.

Appendix 3. Comparison of the early vs late regular rifle seasons, Porcupine Forest (WMZ 56 and 57)

	Early Regular Season				Late Regular Season			
			Bull Harvest				Bull Harvest	
Year	Season Dates	Total Harvest (bulls + calves)	Number	%	Season Dates	Total Harvest (bulls + calves)	Number	%
1989	Oct. 2-7	444	342	77	Nov. 20-Dec. 2	704	359	51
1990	Oct. 8-13	257	182	71	Nov. 19- Dec. 1	438	193	44
1991	Oct. 7-12	421	265	63	Nov. 18-30	752	391	52
1992	Oct. 5-10	330	248	75	Nov. 16-28	456	201	44
1993	Oct. 4-9	341	266	78	Nov. 15-27	702	428	61
1994	Oct. 3-8	287	221	77	Nov. 14-26	734	418	57
1995	Oct. 2-7	385	281	73	Nov. 13-25	1,025	564	55
1996	Oct. 7-12	228	173	76	Nov. 18-30	432	212	49
1997	Oct. 13-18	292	179	61	Nov. 17-22	184	92	50
1998	Oct 12-17	459	291	63	Nov. 16-21	296	167	56

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Barren-ground Caribou *(Rangifer tarandus)*

by Tim Trottier

1.0 Long-term Management Objectives

- To ensure that caribou are accessible and available to traditional users.
- To increase knowledge of caribou ecology.
- To encourage the wise use of caribou.
- To co-operate with other northern wildlife management boards and to involve local individuals and organizations in management programs.
- To strengthen public support for the conservation of caribou.
- To recommend management action to maintain population levels for each herd between a minimum 150,000 (crisis herd size) and levels that can be sustained by the range while maintaining good caribou condition.
- To monitor population levels to determine optimum herd size.
- To protect caribou and their habitat from human disturbance.

2.0 Population Status

2.1 Provincial Overview

The most recent population estimates of the Beverly (276,000) and Qamanirjuaq (490,000) herds came from aerial photographic surveys conducted in 1994. This survey of the Beverly herd demonstrates a moderate, but persistent increase in population size from earlier surveys in the 1980s. Based on the estimated population level, herd status is viewed as good relative to historic harvest rates. The survey of the Qamanirjuaq herd demonstrates a substantial increase in herd size from earlier surveys in the 1980s. Based on the estimated population level, herd status is viewed as excellent.

The distribution of barren-ground caribou in Saskatchewan was typical of most years. They were found entirely within WMZ 76, north of Lake Athabasca and the Fond Du Lac River, and northeast of Wollaston Lake. Caribou from both herds spent the winter in Saskatchewan, although these segments of the herds comprised less than half of the total herds. Satellite collars on five caribou from the Qamanirjuaq herd allowed for a better picture of herd distribution that showed greater overlap with the Beverly herd in the northeastern part of their Saskatchewan range. Collared animals from a herd that normally winters in NWT north of the Beverly herd moved deep into traditional Beverly winter range along the NWT-Sask border.

2.2 Population Indicators

Recruitment data from surveys is not available for 1998-99, but previous counts in 1994 (Beverly) and 1995 (Qamanirjuaq) realized recruitment estimates of 19% and 47%, respectively. While recruitment for the Beverly herd was within the long-term average of 18%, that for the Qamanirujuaq herd was exceptionally high. Historic data on recruitment has shown rates (1966-1995, Beverly: 15% - 27% and Qamanirjuaq: 9% - 47%) that remained close to and higher than the long-term average (18%), suggesting that recruitment this year will be average or above-average.

2.3 Biological Data Collection

Information not available at this time.

2.4 Mortality

2.4.1 Licenced Harvest

Licenced harvest was negligible, similar to the past twenty years, since the mine at Uranium City closed. Therefore an exact value is not presented here, but note that licence sales and harvest have not exceeded 50 for a long time.

2.4.2 Subsistence Harvest

While this form of harvest is the most significant kind, the harvest study was terminated in 1995 due to budget restraints. No data on the Saskatchewan harvest is available for 1998-99. Of the four jurisdictions harvesting from the two herds, only Manitoba collected harvest data during this year.

3.0 Management Objectives and Strategies

- Monitor industrial development, road and trail access onto the caribou range and recommend mitigation to minimize disturbance to caribou that could result in future herd distribution away from communities and important winter habitat in Saskatchewan.
- Promote the development of fire management policy that incorporates the fire management recommendations of the Beverly and Qamanirjuaq Caribou Management Board (BQCMB). These recommendations are specifically designed to ensure continued access and availability to caribou by the traditional users; and to increase knowledge of caribou ecology.

- Promote target competitions, schools poster competition, and use of school materials developed by the BQCMB, in caribou using communities; updating and re-distribution of a hunting ethics poster produced by the BQCMB; and ongoing open discussion about and resolution of questionable harvest practices.

- Distribute BQCMB information and the Board's newsletter to a broad public audience, and promote attendance of community members to Board and Board-related meetings in order to encourage stronger public involvement and gain public support.

- Strongly encourage SERM to provide adequate funding support for future population surveys and related monitoring, and to re-establish the harvest study in order to detect crisis herd levels.

- Use the important habitats document and related material to recommend adequate protection of caribou habitat from industrial development and other human activity on the caribou range.

- Work with aboriginal representatives on the Board to develop criteria for community involvement in monitoring caribou populations, and to take part in the Arctic Borderlands monitoring initiative concerned with effects of global warming on the arctic ecosystems.

Pronghorn Antelope *(Antilocapra americana)*

by Dwight Dobson

1.0 Long-term Management Objectives

- To maintain a provincial wintering core population of 17,400 antelope (Killaby et al. 1992).
- To maintain a herd structure >25 Bucks:100 Does:80 Kids (Killaby et al. 1992).
- To maintain 57,500 km² of core range (WMZs 1-13).
- Once conservation needs are met, to provide priority allocation for subsistence food needs.
- To obtain the informed consent of all potentially affected interests in structuring area specific population objectives, management strategies and regulations.

2.0 Population Status

2.1 Provincial Overview

The 1998 antelope population was estimated to be at a level similar to that experienced during the early 1970s, but is significantly lower than the long-term objective of 17,400 antelope.

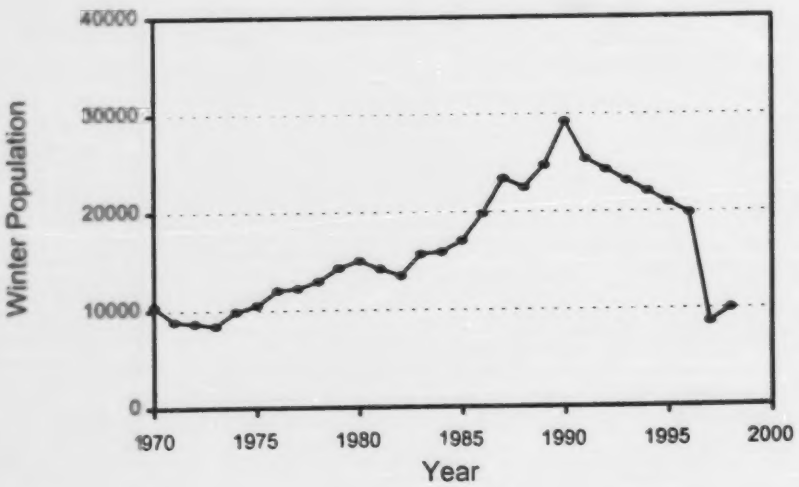


Figure 1. Changes in pronghorn populations in Saskatchewan, 1970 to present.

2.1.1 Population Size/Density Surveys

Antelope size/density surveys are generally conducted in early June to estimate population density prior to parturition. There were no population size/density surveys conducted in 1998. Population surveys were last conducted in five wildlife management zones in early June 1997 (Table 1). Results from these surveys indicated a mean density of 0.37 antelope/km² for the WMZs surveyed (Table 1). This represented a 31% decrease from the 1996 mean population density estimate (0.54 antelope/km²) for the same surveyed WMZs. This places the 1997 core population at 51.6% below the long term objective for the WMZs surveyed (ie. WMZs 2, 3, 6, 7, and 9).

Table 1. Comparison of pronghorn antelope population estimates by survey block, 1990-98.

WMZ	Range Area (km²)	Long Term Objective		Survey Area (km²)	Survey Density (Antelope/km²)			% Diff. of 1997 from Objective
		Population	Density (Antelope/km²)		1996	1997	1998	
CORE [a]								
1	6,586	900	0.14					
2	10,656	4,800	0.45	3,770	0.61	0.19	—	-57.8%
3	4,615	3,600	0.78	2,443	0.71	0.44	—	-43.6%
4	6,557	600	0.09					
5	5,991	900	0.15					
6	4,436	1,000	0.23	559	0.15	0.11	—	-52.2%
7	2,556	1,500	0.59	1,326	0.32	0.23	—	-61.0%
8 & 11	4,048	1,500	0.37					
9	3,607	1,200	0.33	1,492	0.40	0.15	—	-54.5%
10	3,766	700	0.19	600	0.21	—	—	—
12 & 13	4,701	700	0.15					
CORE TOTAL	57,519	17,400	0.30	10,190				
FRINGE [b]								
14, 24-28 & 45		1,300						
18, 19 & 23		400						
15 & 31		200						
FRINGE TOTAL		1,900						
GRAND TOTAL		19,300						

a "Core" refers to populations found in the 1990 range defined by Killaby et al. (1992).
b Occurrence of fringe populations is considered to be strongly influenced by winter severity.

2.1.2 Population Structure Surveys

Pronghorn antelope population structure surveys are generally flown in early July to assess productivity and herd structure. In 1998, these surveys were flown 6 - 7 July, in WMZs 2, 3, and 7, to obtain information on productivity (Table 2). The 1998 kid:mature doe ratio of 0.34 was slightly greater than for 1997 (Table 3). Although the productivity has gradually increased from a low in 1995, the kid:doe ratio was still significantly lower than that of the late 1980s (Figure 2). The mature buck:doe ratio of 0.32 was an significant increase from 1997 (Table 3).

Table 2. Number of pronghorn antelope in each sex and age class by WMZ on the July 1998 aerial survey.

WMZ	Yearling Bucks	Mature Bucks	Does	Kids	Total	Kid:Doe Ratio	Buck:Doe Ratio
2	12	18	69	44	143	0.64	0.43
3	36	87	195	64	382	0.33	0.63
7	3	33	171	22	229	0.13	0.21
Total	51	138	435	130	754	0.30	0.43

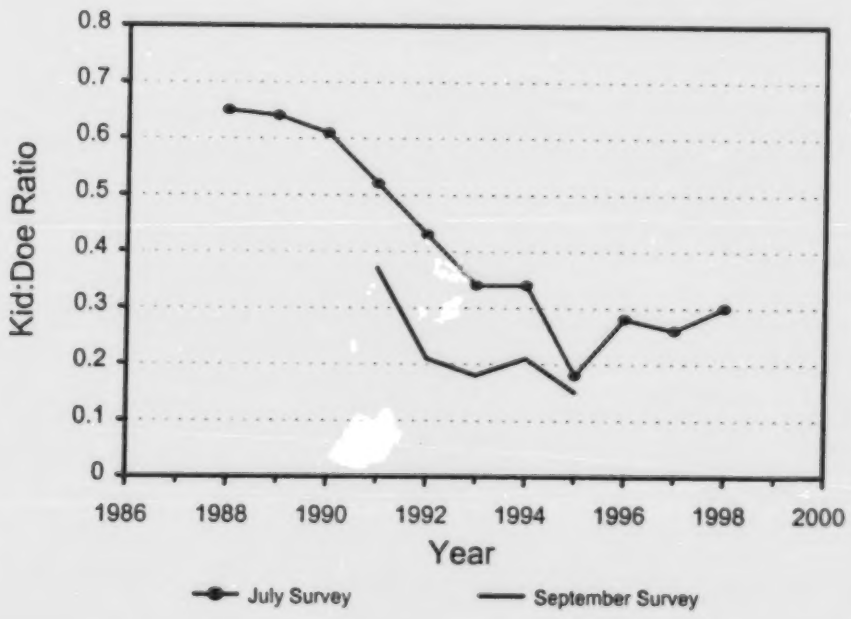


Figure 2. Kid:doe ratios of antelope in July and September (surveys were not conducted in July of 1991 and 1992 or in September of 1996), 1988-98.

Table 3. Provincial pronghorn antelope herd structure, 1991-98.

Herd Structure Ratio	1991	1992	1993	1994		1995		1996	1997	1998
	Sept	Sept	Sept	July	Sept	July	Sept	July	July	July
Kid:Doe	0.37	0.21	0.18	0.34	0.21	0.18	0.15	0.28	0.26	0.30
Kid:Mature Doe[a]	0.42	0.24	0.19	0.38	0.24	0.19	0.15	0.30	0.29	0.34
Bucks:Doe	0.51	0.39	0.42	0.44	0.42	0.35	0.25	0.30	0.26	0.43
Mature Bucks:Doe	0.39	0.29	0.34	0.35	0.33	0.29	0.22	0.22	0.21	0.32

[a] Calculations made by subtracting the number of yearling males from the total number of does, the resultant being the approximate number of reproductively prime females, assuming that equal numbers of yearling does and yearling bucks exist in the population.

2.2 Mortality

Low recruitment of kids into pronghorn populations has been observed throughout key pronghorn range in Saskatchewan, Alberta, Montana and North Dakota over the past several years. It is generally thought that the low recruitment rate is a function of high coyote predation on kids during the first 2 or 3 months following parturition, which was a response to low levels of alternative coyote prey (small mammals).

The winters of 1995/96 and 1996/97 were also thought to have negatively impacted kid survival and recruitment. Licenced hunting seasons were closed in 1997 in response to declining antelope populations.

2.3 Current Population Status

Populations levels in Saskatchewan have generally stabilized or increased slightly as a result of having closed the hunting season since 1997 and not being significantly impacted by winter mortality in 1997/98 or 1998/99. Low recruitment of kids into pronghorn populations still exists with predation still believed to be the primary reason. The 1998/99 winter antelope population in Saskatchewan was estimated to be about 10,000, with a 1998 mid-summer herd structure of 43 bucks :100 does :30 kids. Although a population survey was not flown in 1998, it is generally felt the population level has increased slightly. A sex and age survey flown in 1998 indicates kid recruitment (kid:doe ratio) is marginally higher than the previous year (26 kids:100 does), and the bucks/doe ratio has seen a moderate increase compared to 1997(26 bucks:100 does).

3.0 Management Objectives and Strategies

- Continue to monitor pronghorn population size and structure so any changes can be readily detected.
- Retain the pronghorn antelope hunting season closure until population levels recover.
- Continue communication with other jurisdictions to assess the cause(s) and impacts of poor antelope reproduction and recruitment.

4.0 Literature Cited

Killaby, M., D. Dobson, C. Dunn. 1992. Pronghorn antelope in Saskatchewan - status and management strategies. Sask. Nat. Resour. Wildlife Tech Report 92-2. 137 pp.

Black Bear *(Ursus americanus)*

by A.A. Arsenault

1.0 Long-term Management Objectives

- To maintain stable winter populations of black bears throughout their range to attain a stable provincial population within the upper and lower population limits of 24,000 - 40,000 bears.
- To maintain 469,000 km² of occupied black bear habitat.
- Once conservation needs are met, to provide priority allocation for subsistence needs.
- To obtain the informed consent of all potentially affected interests in structuring population objectives, management strategies and regulations.

2.0 Population Status

2.1 Provincial Overview

Population indices (see section 2.2) continue to suggest a stable to slightly declining bear population. The reduction in harvest adult sex ratio (lowest since 1986), the increased ratio black:off color, both suggest the population is in a slight decline (see section 2.3). The low proportion of cubs in the harvest , and similarity of harvest success and harvest effort to previous years, suggests the population is stable. Population stability is also affirmed by the 1998 harvest age data (see section 2.3) which continues to indicate a mature reproductive component (mean age of harvested sow = 6.47 years) for the Saskatchewan bear population.

Black bears in Saskatchewan have a dual harvest management designation as a fur bearer species (in Fur Conservation Areas) and as a big game species (licenced hunting seasons). International concerns over the status of bear populations (other than in North America) led to the black bear being added to the CITES II listing under the "look-a-like" clause in 1992.

2.2 Populaton Indicators

2.2.1 Hunter Success and Effort

In years where **hunter success** is greater, and **hunter effort** (hunter-days/bear) lower than for previous year(s), the population can be considered to be growing. Hunter success and hunter effort were similar in 1998 compared to 1997, which is an indication of a stable population (Figure 1).

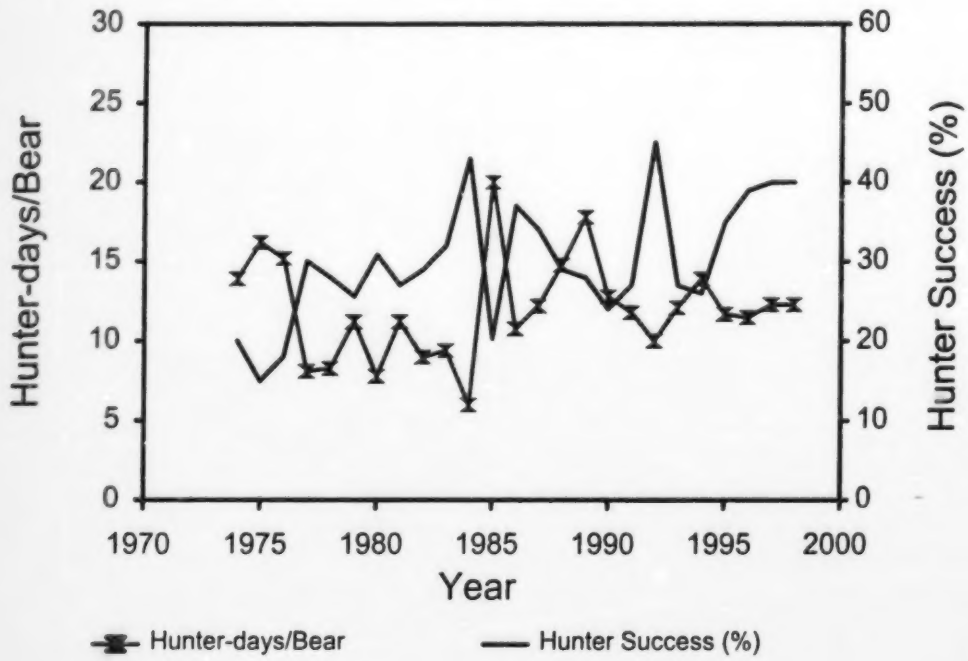


Figure 1. Hunter-days/bear and hunter success for Saskatchewan resident hunters, 1974 - 98.

2.2.2 Mean Age of Females

Female bears become reproductively active at 4 - 6 years of age, and tend to produce offspring every second year. Since black bears have a low reproductive potential, it is necessary to maintain a sufficient number of females of reproductive age in the population. Mean age for female bears harvested in 1998 was 6.47 years, falling within traditional breeding age ranges. See section 2.3.

2.2.3 Harvest Adult Sex Ratio

Hunters tend to select for larger bears. This affords some protection to females which tend to be smaller than males. The **adult sex ratio** was 1.83 boars/sow in the 1998 harvest structure, which is a smaller ratio compared to previous years (Table 1), indicating females may be exposed to increased hunter pressure under current management, and that the population may be starting to decline.

Table 1. Harvest structure for black bears, Saskatchewan, 1986-98.

Year	Boars	Sows	Cubs	Total [a]	Harvest Structure Boars.Sows:Cubs
1986	1,239	547	245	2,031	2.27:1.00:0.45
1987	922	469	71	1,462	1.97:1.00:0.15
1988	976	389	68	1,433	2.51:1.00:0.17
1989	813	363	65	1,241	2.24:1.00:0.18
1990	778	301	20	1,099	2.58:1.00:0.07
1991	623	204	38	865	3.05:100:0.19
1992	731	255	6	992	2.87:1.00:0.02
1993	784	324	9	1,095	2.42:1.00:0.03
1994	656	302	6	964	2.17:1.00:0.02
1995	834	391	0	1,225	2.13:1.00:0.00
1996	1,131	454	10	1,595	2.49:1.00:0.02
1997	1,297	651	47	1,995	1.99:1.00:0.07
1998	1,525	787	37	2,349	1.94:1.00:0.05

a Sample total does not include bears of unknown sex.

2.2.4 Proportion of Cubs in Harvest

Another indicator of an over-exploited bear population is a marked increase in the **proportion of cubs in the harvest**. Cubs accounted for a small proportion (1.6%) of the harvest in 1998 (Table 1). The majority of cubs harvested are reported in the fall harvest. The low representation of cubs in the annual harvest structure (Table 1) indicates a stable population.

2.2.5 Color Phase Ratio

Hunters tend to select off-colored bears. This leads to shifts in **color phase ratio** in the harvest (Table 2). Changes in this ratio can serve as a measure of the degree of hunting pressure on a bear population. Decreasing ratios of black to off-colored bears in the harvest serve as an indicator that a population is increasing in size. These values are slightly higher in recent years compared to the early 1990s (Table 2), suggesting a slight population decrease.

Table 2. Color phase ratios for black bears harvested in Saskatchewan, 1986-98.

Year	Black:Off Color	Sample Size
1986	2.89:1.00	74
1987	3.50:1.00	118
1988	5.04:1.00	169
1989	2.14:1.00	430
1990	2.20:1.00	272
1991	1.86:1.00	263
1992	2.02:1.00	398
1993	2.03:1.00	476
1994	1.99:1.00	523
1995	2.36:1.00	690
1996	2.25:1.00	592
1997	2.51:1.00	499
1998	2.60:1.00	1,213

2.3 Biological Data Collection

Table 3 presents the historical age structure of harvested black bears based on tooth samples collected by outfitters.

Table 3. Average age of male and female black bears harvested in Saskatchewan, 1986-98.

Year	Male Age			Female Age		
	Mean	±SD	n	Mean	±SD	n
1986	4.48	3.57	31	5.50	3.35	31
1987	4.70	5.04	53	5.56	4.12	34
1988	5.03	3.53	92	4.18	3.73	51
1989	4.00	3.36	233	4.97	3.66	179
1990	3.91	3.18	172	4.77	3.14	92
1991	3.91	2.99	186	4.51	3.28	71
1992	5.01	4.48	261	6.01	4.48	139
1993	4.63	3.92	306	5.96	4.79	166
1994	4.52	3.20	310	6.31	4.48	177
1995	4.99	3.04	399	6.84	4.93	191
1996	4.86	3.05	354	5.70	4.11	180
1997	4.19	2.94	278	6.52	5.52	155
1998	5.38	3.59	612	6.47	4.37	382

2.4 Mortality

2.4.1 Licenced Harvest

2.4.1.1 Licence Sales

Black bear licence sales in 1998 increased almost 15% compared to 1997 (Table 4). Licence sales to resident, Canadian, and non-resident hunters continue to increase annually. Greatest increase in licence sales was for resident hunters.

Table 4. Provincial black bear licence sales, 1995-98.

	1995	1996	1997	1998	% Change from 1997
Saskatchewan Resident	1,492	1,809	1821	2262	24.2
Canadian Resident	36	63	70	74	5.7
Non-resident	1,477	1601	1788	1888	5.6
Total Sales	3,005	3,473	3,679	4224	14.8

NOTE: All licence sales represent final sale figures as of March 31, 1999.

2.4.1.2 Hunting Activity and Harvest

Saskatchewan resident hunters harvested 772 black bears (Table 5), Canadian residents harvested 41 black bears, and non-resident hunters harvested 1,536 black bears (Table 6), for a total estimated provincial harvest by hunting of 2,349 black bears in 1998. Approximately 80% of the black bears harvested by resident and non-resident hunters were taken during the spring season, with the majority coming from the forest ecozone, followed by the forest fringe (Tables 5 and 6).

Non-resident hunters had a higher success rate with resident hunters taking considerably longer (hunter-days/bear) to harvest a black bear compared to hunter effort by non-resident hunters (Tables 5 and 6). Annual resident harvest success tends to be about half that of non-resident hunters (Table 7). Annual harvest by resident hunters in relation to total harvest (including trapping) is presented in Figure 1.

Table 5. Provincial black bear harvest activity by season for resident hunters, 1998.

Season and Ecozone	# Actual Hunters	# Zone Hunters	Harvest					Harvest Structure Boars:Sows:Cubs	Hunter Success (%)	Hunter-days	Hunter-days/ Bear
			Boars	Sows	Cubs	Unkn	Total				
SPRING											
Parkland	126	132	66	6	0	0	72	11.00:1.00:0.00	57	712	9.9
Forest Fringe	425	467	102	12	12	6	132	8.50:1.00:1.00	30	2,286	18.2
Forest	730	796	191	96	0	0	287	2.00:1.00:0.00	39	3,381	11.8
Shield	18	18	6	0	0	0	6	6.00:1*:0.00	33	72	12.0
Total	1,298	1,412	365	114	12	6	497	2.95:1.00:0.14	38	6,451	13.1
FALL											
Parkland	102	114	30	0	12	0	42	29.92:1.*:11.97	41	455	10.9
Forest Fringe	347	425	78	48	12	0	138	1.63:1.00:0.25	40	1,466	10.7
Forest	335	401	60	30	0	6	96	2.00:1.00:0.00	27	1,586	17.7
Shield	6	12	0	0	0	0	0	—	0	36	–
Total	790	951	168	78	24	6	276	2.15:1.00:0.31	34	3,543	13.2
SPRING + FALL											
Parkland	228	246	96	6	12	0	114	16.00:1.00:2.00	50	1,167	10.2
Forest Fringe	574	667	144	78	24	0	245	1.85:1.00:0.29	42	2,679	10.9
Forest	1,047	1,136	270	105	0	0	375	2.57:1.00:0.00	37	5,324	13.8
Shield	22	22	6	0	0	0	6	6.00:1*:0.00	25	88	14.7
Total	1,853	2,056	486	211	36	0	733	2.30:1.00:0.17	40	9,133	12.3

Note: Data source was the Hunter Harvest Survey (General Appendix 2)
1* no females recorded in the harvest

Table 6. Provincial black bear harvest activity by season for non-resident hunters, 1998.

Season and Ecozone	# Actual Hunters	# Zone Hunters	Harvest					Harvest Structure Boars:Sows:Cubs	% Hunter Success	Hunter-days	Hunter-days/ Bear
			Boars	Sows	Cubs	Unkn	Total				
SPRING											
Parkland	7	7	1	2	0	0	3	0.50:1.00:0.00	43	34	9.0
Forest Fringe	128	128	47	43	0	1	92	1.09:1.00:0.00	72	410	4.5
Forest	1,503	1,503	712	434	0	32	1,178	1.64:1.00:0.00	78	5,410	4.6
Shield	50	50	39	4	0	0	43	10.33:1.00:0.00	85	201	5.3
Total	1,688	1,688	799	483	0	33	1,316	1.65:1.00:0.00	78	6,055	4.6
FALL											
Parkland	9	9	2	2	0	0	4	1.00:1.00:0.00	57	35	7.0
Forest Fringe	75	75	36	21	0	0	57	1.71:1.00:0.00	77	214	3.7
Forest	220	220	94	57	0	6	158	1.65:1.00:0.00	72	825	5.20
Shield	–	–	–	–	–	–	–	–	–	–	–
Total	303	303	133	81	0	6	220	1.65:1.00:0.00	73	1,075	4.9
SPRING + FALL											
Parkland	16	16	3	4	0	0	7	0.75:1.00:0.00	44	69	9.9
Forest Fringe	203	203	83	64	0	1	147	1.30:1.00:0.00	72	624	4.2
Forest	1,723	1,723	748	491	0	38	1,336	1.52:1.00:0.00	78	6,235	4.7
Shield	50	50	39	4	0	0	43	10.33:1.00:0.00	85	201	5.3
Total	1,991	1,991	932	564	0	39	1,536	1.65:1.00:0.00	77	7,130	4.6

Note: Data source was Outfitter Harvest Records.

Table 7. Hunter success and harvest, 1994 - 98.

	Hunter Success (%)					Harvest				
Licence Type	1994	1995	1996	1997	1998	1994	1995	1996	1997	1998
Resident	26	35	39	40	40	442	540	681	744	733
Non-resident	68	68	73	75	77	960	1,005	1,219	1,389	1,536
Canadian Resident[a]	47	51	55	58	58	31	18	39	41	41
Total	43	52	53	58	55	1,433	1,563	1,939	2,174	2,310

[a] Mean of hunter success of resident and non-resident hunters.

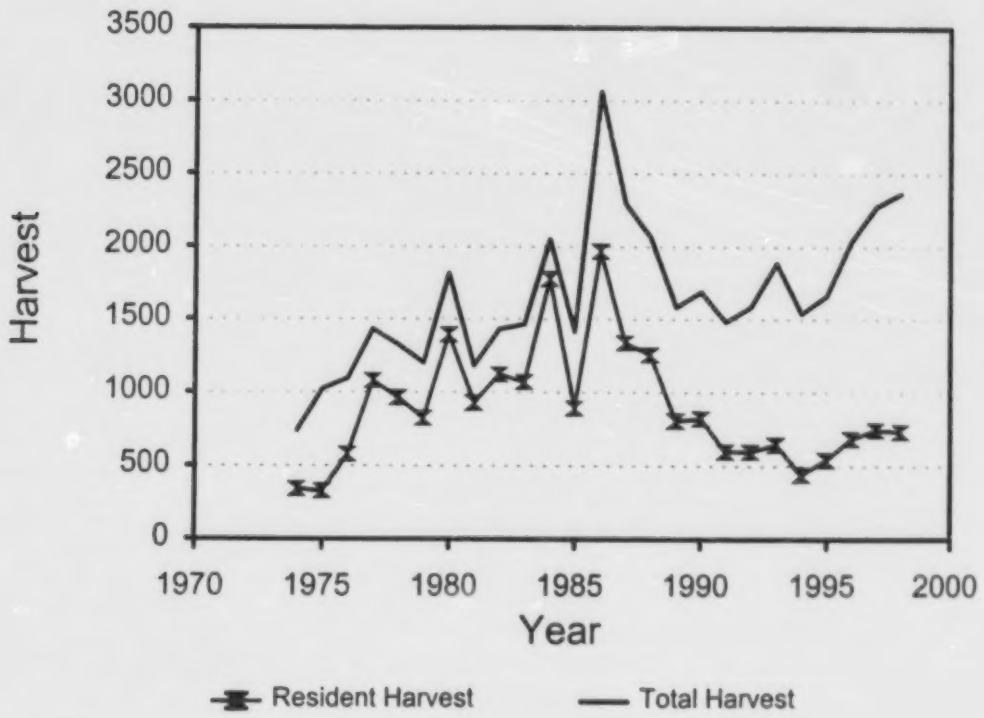


Figure 1. Harvest estimates for black bears in Saskatchewan, 1974 - 98. (Total harvest includes harvest by licenced hunting and trapping, but not subsistence harvest or nuisance bears).

2.4.1.3 Harvest Structure

Bears reported in the harvest as cubs were likely yearlings if harvested in the spring, or young-of-the-year cubs if harvested in the fall. There were 36 cubs reported for both the fall and spring harvest, all taken by resident hunters (Tables 5 and 6). The provincial harvest structure was 1.83 boars:1.00 sows:0.05 cubs.

Total harvest was composed of 63.6% boars, 34.8% sows, 1.6% cubs. Non-resident hunters took a smaller proportion of boars relative to the number of sows, in comparison to that taken by resident hunters (Tables 5 and 6).

2.4.2 Trapping

The number of bears harvested by trapping has been declining since 1970 (Figure 3). In 1998 only 58 bear pelts were marketed by trappers.

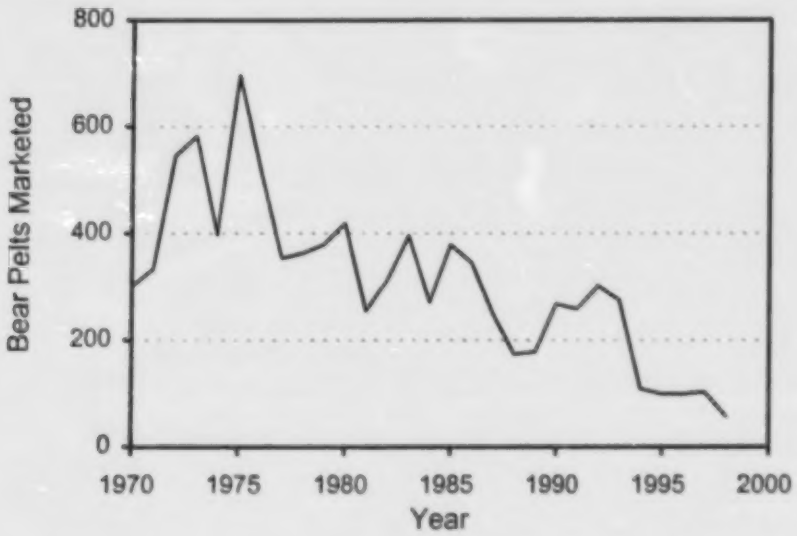


Figure 3. Annual number of bear pelts marketed by commercial trapping, 1970 - 1998.

2.4.3 Subsistence Harvest

No estimate of subsistence harvest of bears is available.

2.4.4 Nuisance Bears

No estimates available for number of problem bears that were destroyed.

3.0 Management Objectives and Strategies

- Monitor Saskatchewan resident hunting activity and harvest using the Hunter Harvest Survey (General Appendix 2), and monitor non-resident hunting activity and harvest using Outfitter Client Reports. These data, which include the number, sex ratio, age ratio, and pelt color of harvested black bears, are important indicators used to assess the status of black bear populations.

- To sustain healthy populations in Saskatchewan, the annual harvest of black bears should remain near 1,750±20% bears annually. A licence will continue to be required to harvest bears in agricultural Saskatchewan (WMZs 1-36, 38-41, and 44-46). This was implemented in 1994 to solidify the CITES system and aid in enforcement of hunting regulations. Landowners do not require a licence to kill bears causing property damage.

- Harvest in 1998 (2,310 bears) was significantly larger than the recommended upper limit of 2,100 bears. Therefore, population indices and harvest levels in each WMZ should be closely monitored to assess whether continued high harvest in future years is sustainable, and to assess when a change in allocation strategy may be necessary.

- Information on 1998 season structure and bag limits can be found in General Appendix 1.

- Stable bear populations and the desire for a longer fall hunting season have resulted in an earlier fall season opening date, with an extra week added to the fall hunting season. The 1999 fall season will run from Aug. 23 - Oct. 9 in most WMZs.

- Status and management of bears needs to be reviewed in Saskatchewan, including establishment of area-specific population and sustainable harvest objectives. Currently population estimates and harvest objectives are interim estimates.

- Collect data (sex, age, location) on number of nuisance bears that were destroyed annually as a means of monitoring the level and types of damage caused by bears, and to assist with management decisions on population regulation.

Migratory Birds

by Don McKinnon

Introduction

- The Canadian Wildlife Service (CWS) is primarily responsible for management of migratory birds, although in Saskatchewan, they are managed in consultation with the provincial authority. CWS collects most of the biological and harvest data.

Ducks

- From 1979 to 1984, stabilized duck regulations were in effect. With a bag limit of 8 birds/day, those regulations were considered liberal. The 6-year framework of stabilized duck regulations ended in 1985 when bag limits were reduced to 4 birds/day. Bag limits were relaxed in 1986 and 1987, providing for 6 ducks/day of which only four could be mallards. Additionally, the duck season in southern Saskatchewan was delayed to September 15. These measures were taken to effect a 25% reduction in mallard harvest from that expected under stabilized regulations.
- In 1988 duck regulations were further restricted to 5 birds/day of which only three could be mallards. This resulted in a 57% reduction in the harvest rate of mallards from that expected under stabilized regulations. Further restrictions in 1989 included a 1 bird/day limit for pintails and canvasbacks, although the total daily bag and mallard limits remained the same as in 1988. The daily limit for canvasbacks was increased to two in 1992. In 1993 and 1994, all restrictions on canvasbacks and mallards were removed, resulting in a daily bag of five birds for each species. In 1995, the duck bag limit was increased to eight birds daily with continuation of the one per day pintail restriction. In 1996, the total duck bag remained the same as in 1995. In 1997, the restriction on pintails was increased to three birds per day.

Geese

- For several years, goose hunting regulations remained stable, except for calendar adjustments and moving the three additional snow or Ross' goose daily bag (six possession) forward, from mid-October to opening day in eastern Saskatchewan in 1993. In 1994 and 1995, the three additional white goose daily bag took effect in all zones on opening day.
- In 1995, the goose bag limit was increased to nine daily of which not more than six could be dark (white-fronted or Canada) geese and not more than three could be white-fronted geese. This represented an increase of one dark goose in the daily bag (from five to six) and an increase of one white-front (from two to three) in western Saskatchewan. The resident goose season in western Saskatchewan also opened one week earlier and the Canadian resident and non-residents of Canada season opened 1 week earlier in the South Game Bird District (third Monday in September compared to the second Monday in September).

- In 1996, separate bag limits were established for white (snow/blue and Ross') and dark (white-fronts and Canada) geese. The dark goose limit remained at six daily, of which not more than three could be white-fronted geese. The white goose limit was set at 10 daily including any combination of snow/blue or Ross' geese. With exception of white-fronted geese, the 1996 "Residents of Saskatchewan" goose season was moved to September 1 (September 2, 1996) rather than the second Monday in September. White-front opening remained at the second Monday in September.
- In 1998, the dark goose limit increased to eight birds daily, however only five could be white-fronted geese. To increase harvest on white-geese and in particular snow geese, Canadian and non-resident hunting of white geese opened across the province on September 1, 1998, approximately two weeks earlier than in previous years. As well the possession limit for white geese has increased from 20 to 30 birds.

Review of the 1998 Hunting Seasons

- After several years of uninterrupted decline, the number of Migratory Game Bird Permits sold in the province stabilized in 1992 at approximately 20,000. The number of Federal Migratory Game Bird Permits sold in 1998 (21,822) was the highest number purchased since 1991 (22,414) (Table 3 of Executive Summary).

Other Waterfowl Regulations

- Five hundred (500) meter restrictions on major waterfowl staging areas are set by the province. The 500 meter restriction on Handsome Lake was removed in 1994. There were no changes to 500 meter restrictions since 1994.

Ducks

by Don McKinnon

Review of the 1998 Hunting Season

- With the return of more favorable moisture conditions, the 1995 duck bag was increased from five to eight birds daily and remained at eight in 1996 and 1997. Eight ducks daily is considered to be liberal and is equivalent to bag limits in effect during the stabilized regulations period (1979-84). The estimated harvest of ducks in Saskatchewan during 1998 was 205,545 birds, a 1% increase from the 204,211 taken in 1997, but remains 46% below the 1979-84 average (Table 1, Figure 1). Mallard bag limits were liberalized in 1993 (daily bag increased from three to five birds) and remained at five daily until 1995 when the duck bag was increased to eight birds daily, including mallards. A total of 129,461 mallards were harvested in 1998, a decrease of 3% from the 133,017 taken in 1997, and 55% below the 286,018 bagged annually during the period of stabilized regulations (Table 2, Figure 2).

Table 1. Estimated harvest of ducks in Saskatchewan, 1979-98 by zone (after CWS Progress Notes and interim data via H. Levesque, CWS, Ottawa).

Year	Zone 1	Zone 2	Zone 3	Total[a]
1979	173,336	154,397	254,960	582,693
1980	144,446	129,774	169,331	443,551
1981	82,305	70,474	120,472	273,251
1982	95,401	84,602	144,144	324,147
1983	125,434	75,343	180,967	381,744
1984	80,266	72,159	105,243	257,668
1979-84 Average	116,865	97,792	162,520	377,176
1985	79,411	49,232	82,275	210,918
1986	81,291	58,489	86,618	226,398
1987	64,830	59,237	77,452	201,519
1988	30,321	41,785	32,670	104,776
1989	36,743	35,748	31,641	104,132
1990	35,170	34,436	46,331	115,937
1991	29,370	21,225	51,382	101,977
1992	31,703	18,233	40,041	89,977
1993	27,090	16,168	32,759	76,017
1994[b]	52,641	22,448	53,522	128,611
1995	44,490	28,924	73,794	147,208
1996	71,788	25,600	92,745	190,133
1997	66,437	36,391	101,383	204,211
1985-97 Average	50,099	34,455	61,739	146,293
1998	56,945	37,873	110,727	205,545
% Change:				
1998 from 1997	-14	-4	9	1
1998 from 1979-84 Average	-51	-61	-32	-46
1998 from 1985-97 Average	14	10	79	41

[a] Total includes Zones 1, 2 and 3, as defined by the CWS National Harvest Survey.
[b] Revised (June/96) estimates.

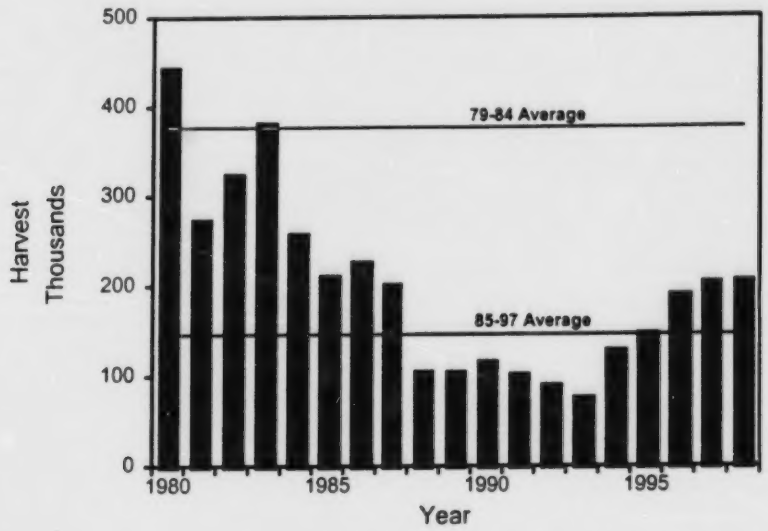


Figure 1. Saskatchewan duck harvest, 1979-98 (after CWS Progress Notes and interim data via H. Levesque, CWS, Ottawa).

Table 2. Estimated harvest of mallards in Saskatchewan, 1979-98 by zone (after CWS Progress Notes and interim data received via H. Levesque, CWS, Ottawa).

Year	Zone 1	Zone 2	Zone 3	Total[a]
1979	117,330	119,394	185,940	422,664
1980	116,997	107,808	129,841	354,646
1981	68,721	55,082	106,391	230,194
1982	71,046	64,080	106,006	241,132
1983	99,291	48,263	138,238	285,792
1984	58,099	46,116	77,467	181,682
1979-84 Average	88,581	73,457	123,981	286,018
1985	54,464	37,728	66,236	158,428
1986	51,222	40,652	59,233	151,107
1987	53,011	46,739	59,288	159,038
1988	20,023	27,813	25,683	73,519
1989	24,027	23,812	26,943	74,782
1990	24,739	22,514	31,579	78,832
1991	17,385	16,012	36,267	69,664
1992	22,479	14,542	29,966	66,987
1993	14,686	12,509	22,557	49,752
1994[b]	36,960	12,615	37,873	87,448
1995	28,201	18,033	56,340	102,574
1996	45,306	14,679	61,623	121,608
1997	38,511	29,365	65,141	133,017
1985-97 Average	33,155	24,386	44,518	102,058
1998	33,236	17,631	78,594	129,461
% Change:				
1998 from 1997	-14	-40	21	-3
1998 from 1979-84 Average	-62	-76	-37	-55
1998 from 1985-97 Average	0	-27	77	-27

[a] Total includes Zones 1, 2, and 3, as defined by the CWS National Harvest Survey.
[b] Revised (June/96) estimates.

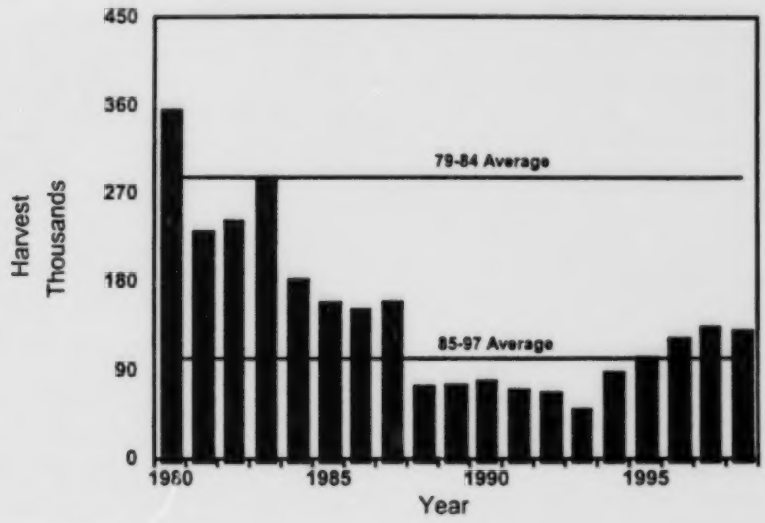


Figure 2. Saskatchewan mallard harvest, 1979-98 (after CWS Progress Notes and interim data via H. Levesque, CWS, Ottawa).

- From 1989 to 1991 inclusive, hunters were restricted to a bag limit of one each for pintails and canvasbacks. In 1992, the canvasback limit was increased to two birds and all restrictive regulations were removed in 1993. Canvasback harvest decreased by 77% from 1,708 in 1997 to 392 in 1998, and remains 89% below the 1979-84 average of 3,504 birds (Table 3). Since 1989, the pintail limit has remained at one bird daily. Pintail harvest decreased by 19% from 13,656 in 1997 to 11,099 in 1998, but remains 28% below the 1979-84 average of 15,387 birds (Table 3).

Population Status

- Precipitation for the late summer and fall of 1998 was above average except for the southwest, which received below normal precipitation. Winter precipitation was average to above average across most of the southern areas of the province with the exception of the extreme southwest and areas across the northern part of the survey area where it was below average. Spring precipitation continued to remain above to well-above average (115-200% of normal) across the survey area with areas in the southeast extremely wet. Rain and snow events were numerous throughout May, especially in the southern parts of the province.
- A total of 1.7 million ponds were recorded in southern Saskatchewan during July 1998, an increase of 14% from the 1.4 million enumerated in 1997, and remains 57 and 83% above the 10-year and long-term (1955-97) averages. There were 13% more ponds in July (1998) than in May (1998). Normally, there are 40% fewer ponds in July compared to May (Appendix 1).

Table 3. Estimated harvest of pintails and canvasbacks in Saskatchewan, 1979-98 (after CWS Progress Notes and interim data via H. Levesque, CWS, Ottawa).

Year	Pintail	Canvasback
1979	29,583	7,593
1980	17,945	1,292
1981	2,287	872
1982	12,687	3,314
1983	16,781	2,703
1984	13,038	5,250
1979-84 Average	15,387	3,504
1985	7,654	4,051
1986	9,047	5,145
1987	8,777	563
1988	5,994	2,109
1989	5,080	248
1990	10,162	447
1991	4,531	2,353
1992	2,011	273
1993	3,263	1,838
1994 [a]	7,229	1,135
1995	6,528	1,307
1996	14,477	3,914
1997	13,656	1,708
1985-97 Average	7,570	1,930
1998	11,099	392
% Change:		
1998 from 1997	-19	-77
1998 from 1979-84 Average	-28	-89
1998 from 1985-97 Average	+47	-80

[a] Revised (June/96) estimates.

- The 1998 duck brood index (67,300) for southern Saskatchewan decreased 58% from 1997 (161,300) and remains 16% and 47% above the 10-year and long-term (1955-97) averages, respectively. The mallard late nesting index, which is an estimate of broods expected to hatch after the July survey, was 12% above the 1997 level and 55% above the long-term (1955-97) average, but 3% below the 10-year mean. (Appendix 2).
- May 1999 ponds in southern Saskatchewan, as determined by the CWS/United States Fish and Wildlife Service (USFWS) spring breeding population survey, were up 72% from 1998 and 33% and 26% above the 10-year and long-term (1955-98) averages, respectively. All of the six strata in southern Saskatchewan showed an increase in May ponds over 1998 (Appendix 3).
- In 1999, the total duck breeding population in southern Saskatchewan (strata 30-35) was 9.7 million, a increase of 16% from the 8.4 million estimated in 1998 (Table 4). Divers and dabblers are 9 and 17% above 1998 estimates, 24% and 62% above the 10-year average and

remain 20% and 33% above the long-term average, respectively. Mallard numbers increased 3% and pintails increased by 59% from 1998 and 60% and 62% above the 10-year average, respectively. Canvasback numbers increased from 1998 (3%) and remain 50% and 39% above the 10-year and long-term averages, respectively (Table 4).

Table 4. Status of waterfowl breeding population estimates by species and stratum with comparisons against the previous year, the previous 10-year average, and the long-term average (estimates in thousands)[a].

	Stratum										% Change		
Species /Pond	30	31	32	33	34	35	1999 Total	1998 Total	10-Yr Ave	Long-term Ave	1998	10-Yr Ave	Long-term Ave
Ducks	1105.9	1350.8	4129.9	359.9	1476.7	1266.8	9690	8382.9	6210.2	7380.1	15.6	56.0	11.3
Dabblers													
Mallard	382.2	391.6	968.8	121.1	403.6	261.2	2,528.6	2,448.7	1,579.7	2,103.8	3	60	20
Gadwall	92.0	126.7	519.7	45.2	125.6	119.5	1,028.7	1,342.0	714.2	523.8	-23	44	96
Wigeon	60.2	42.9	178.1	19.3	29.4	15.6	345.5	305.5	277.5	456.7	13	25	-24
GWT	58.2	74.7	73.9	3.9	108.0	23.5	342.2	271.2	216.2	226.9	26	58	51
BWT	154.2	319.7	920.4	30.0	326.9	359.7	2,110.9	1,589.0	1,200.2	1,176.7	33	76	79
Shoveler	120.0	159.8	626.9	46.1	152.6	175.9	1,281.3	790.5	723.0	597.3	62	77	115
Pintail	35.8	22.7	539.4	48.2	62.6	166.5	875.2	551.8	544.1	1,309.1	59	61	-33
Subtotals	902.5	1,138.1	3,827.3	313.8	1,209.2	1,122.0	8,512.9	7,302.2	5,255.4	6,394.5	17	62	33
Divers													
Redhead	54.7	65.3	66.8	4.3	58.1	39.2	288.3	268.1	204.0	184.9	8	41	56
Canvasback	29.9	56.1	69.8	6.9	53.8	37.0	253.4	246.9	169.0	182.6	3	50	39
Scaups	45.6	32.0	109.2	30.7	50.2	19.7	287.4	300.2	357.8	440.6	-4	-20	-35
Ring-neck	9.0	6.9	14.7	0.0	18.0	8.6	57.2	30.8	30.0	25.9	86	91	121
Goldeneye	8.1	13.7	1.8	0.0	1.3	4.3	29.5	66.7	35.7	21.2	-56	-17	39
Bufflehead	18.9	24.6	1.5	1.4	5.9	6.2	88.4	78.8	48.7	28.5	12	82	210
Ruddy Duck	6.5	12.2	38.8	2.9	80.0	29.9	170.3	82.3	102.2	93.8	107	67	82
Subtotals	202.6	210.8	302.6	46.1	267.5	144.8	1,174.5	1,073.7	947.4	977.4	9	24	20
Miscellaneous													
Oldsquaw	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	–	-100	-100
Eiders													
Scoters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.1	3.6	-100	-100	-100
Mergansers	0.8	1.9	0.0	0.0	0.0	0.0	2.6	6.8	5.2	4.5	-61	-50	-42
Subtotals	0.8	1.9	0.0	0.0	0.0	0.0	2.6	6.9	7.4	8.1	-62	-65	-68
Total Ducks	1,105.9	1,350.8	4,129.9	359.9	1,476.7	1,266.8	9,690.0	9,382.9	6,210.2	7,380.1	16	56	11
Canada Goose	41.3	91.2	42.2	6.5	41.9	15.2	238.4	373.3	209.5	76.2	-36	14	213
Am. Coot	29.7	80.8	350.1	12.6	193.6	156.9	823.7	594.3	559.1	421.4	39	47	96
Ponds	313.1	344.4	807.0	93.5	614.9	362.3	2,535.3	1,470.2	1,905.0	2,005.7	72	33	26

[a] Adjusted for visibility bias.

Rationale for 1999 Regulations

- With exception of pintails, all restrictive regulations implemented in 1985 and 1988 were eliminated in 1995. Recognizing the current status of pintails and expectations of the hunting public, past restrictive regulations for pintails (1 daily) were continued in 1996, but will be increased to 3 daily in 1997. The 1997 daily bag will be eight ducks, of which only three may be pintails (Appendix 4).
- In 1995, the province was divided into a North Game Bird District (NGBD) and a South Game Bird District (SGBD). The NGBD was originally comprised of WMZs 43, 47 (the portion north of Highways No. 3 and 26) and 48 to 76 and the SGBD was comprised of WMZs 1 to 42 and 44 to 47 (the portion south of Highways No. 3 and 26). In 1996, the entire portion of WMZ 47 was included in the NGBD. In future, the duck season in the NGBD will open on September 1 (unless September 1 falls on a Sunday - then September 2) and on the second Monday in September in the SGBD.
- Regulatory changes in 1995 included opening the duck hunting season in WMZ 52 on September 1 as it was incorporated in the NGBD. There were no changes to the Game Bird District boundaries in 1996 and none are anticipated for 1997. The daily duck bag was increased from five to eight in 1995 and will remain at eight in 1999.
- In 1997, the pintail bag limit was increased from 1 to 3 daily.
- In 1998, only calendar adjustments to season dates were made.

1999 Duck Seasons

All Hunters

Wildlife Management Zones Open	Season Dates (inclusive)	Bag Limit
North Game Bird District including Athabasca Sand Dunes, Clearwater River, Greenwater Lake, Lac La Ronge, Meadow Lake, Narrow Hills and Wildcat Hill and Clarence-Steepbank Lakes Provincial Parks; Fort a la Corne and Horsehide Lake Wildlife Management Units; and Bronson Forest and Round Lake Recreation Sites	Sept. 1 - Dec. 11	**Ducks:** 8 daily of which 3 only may be pintail **Coots and Snipe:** 10 each daily **Possession:** 2 times daily limit
South Game Bird District including Duck Mountain and Moose Mountain Provincial Parks; Valeport Wildlife Management Unit; and that portion of Douglas Provincial Park located west of Diefenbaker Lake (Qu'Appelle Arm) and starting Sept. 20, Last Mountain Lake National Wildlife Area	Sept. 8 - Dec. 11	

Appendix 1. Long-term trend in July pond indices by stratum in southern Saskatchewan, comparing 1998 with 1997, the 1985-97 average, the 1955-97 long-term average, and comparison of May with July ponds in 1998 (estimates in thousands)[a]

Year	Stratum						Total
	30	31	32	33	34	35	
1955	138.6	332.1	374.5	120.5	668.5	449.0	2,083.2
1956	120.9	186.8	210.1	34.8	346.5	216.2	1,115.3
1957	59.0	136.8	127.6	18.9	260.8	77.4	680.5
1958	57.0	82.8	69.1	18.4	127.9	46.1	401.3
1959	40.1	95.9	123.0	31.5	155.6	74.1	520.2
1960	47.3	104.0	136.8	16.9	229.7	102.5	637.2
1961	41.0	35.6	51.1	10.3	32.8	22.4	193.2
1962	29.9	40.0	62.6	12.4	—	—	144.8
1963	93.0	97.2	227.8	41.6	177.5	89.4	726.5
1964	33.5	82.5	99.2	13.1	141.9	144.3	514.5
1965	112.4	188.7	289.1	88.7	167.5	69.5	915.9
1966	149.0	320.8	239.9	72.9	164.3	105.2	1,052.1
1967	86.4	136.5	192.6	44.6	101.1	50.2	611.6
1968	66.3	96.2	88.5	15.9	41.1	20.2	328.2
1969	125.4	151.8	357.0	63.0	86.6	159.2	943.1
1970	278.3	365.8	568.2	70.1	219.3	209.6	1,711.4
1971	159.1	277.5	335.9	41.9	171.7	91.6	1,077.7
1972	116.5	189.7	154.8	25.2	108.0	107.4	701.6
1973	153.1	442.7	145.3	21.7	103.5	52.4	918.6
1974	262.5	309.9	455.3	57.5	252.5	175.0	1,512.7
1975	216.7	299.6	391.1	69.1	282.5	281.9	1,540.8
1976	165.1	254.5	414.3	55.2	266.7	211.5	1,367.3
1977	101.6	187.4	183.0	19.9	154.1	72.2	718.1
1978	82.1	177.8	240.1	50.4	165.3	135.7	851.4
1979	159.6	230.8	274.2	46.9	169.2	155.8	1,036.4
1980	77.3	109.8	90.4	21.9	63.0	32.7	395.1
1981	75.7	87.0	96.3	22.9	52.2	29.6	363.7
1982	130.9	197.1	372.5	122.0	86.0	55.4	963.9
1983	134.8	313.9	237.5	44.1	366.3	99.1	1,195.7
1984	126.8	218.8	140.1	21.7	103.4	41.9	652.7
1985	186.2	292.9	173.8	20.9	177.5	55.8	907.1
1986	188.0	218.8	170.0	36.3	171.3	90.0	874.4
1987	126.8	183.3	123.7	27.7	115.1	63.0	639.5
1988	120.4	126.5	94.1	36.6	41.3	23.4	442.3
1989	101.2	108.4	129.6	36.3	51.6	31.9	459.0
1990	101.2	135.0	135.5	21.7	96.3	48.8	538.5

Appendix 1. (Continued).

Year	Stratum						Total
	30	31	32	33	34	35	
1991	187.4	210.6	722.3	165.6	228.5	177.1	1,691.5
1992	87.6	101.6	132.5	24.5	135.5	77.4	559.1
1993	237.9	271.5	301.0	47.6	281.1	136.8	1,276.0
1994	248.8	314.5	501.6	74.1	256.5	110.4	1,506.0
1995	122.1	252.7	237.6	77.9	261.8	115.4	1,067.6
1996	227.2	306.0	464.4	82.4	380.1	206.4	1,666.6
1997	158.8	271.8	430.8	86.0	310.4	169.8	1,427.5
1998	158.0	325.7	311.9	73.4	476.2	320.0	1,665.2
10 Year Average	159.3	209.9	314.9	65.3	204.3	109.7	1063.4
Long-term Average	128.7	198.7	241	47.3	185.1	111.5	912.2
% Change:							
1998 from 1997	0	20	-28	-15	53	88	17
1998 from 10-year Average	-1	55	-1	12	133	192	57
1998 from Long-term Average	23	64	29	55	157	187	83
May Ponds 1998 (adjusted)	146.5	284.6	345	49.3	403	241.8	1470.2
% Change:							
May to July 1998	8	14	-10	49	18	32	13

[a] July ponds are unadjusted for visibility bias.

Appendix 2. Long-term trend in waterfowl brood and late-nesting indices in southern Saskatchewan, 1955-98 (index in thousands[a]).

Year	Duck Brood Index[b]	Average Brood Size[b]	Mallard Late Nesting Index[c]	Duck Late Nesting Index[c,d,e]	Coot Brood Index
1955	236.2	6.7	90.4	229.6	18.9
1956	368.6	6.0	52.3	151.7	65.0
1957	588.7	6.2	27.1	60.4	208.0
1958	275.5	4.2	49.7	114.7	21.6
1959	103.8	4.1	23.6	60.2	5.9
1960	121.0	4.7	40.8	89.8	15.1
1961	71.9	4.6	5.7	10.0	5.8
1962	28.5	5.5	5.9	12.7	0.0
1963	46.2	5.4	15.4	43.1	1.9
1964	67.8	5.8	10.9	26.3	9.0
1965	46.8	6.0	29.8	81.9	6.8
1966	95.9	5.8	25.8	79.3	8.0
1967	94.6	5.4	14.8	64.9	11.6
1968	77.8	5.0	12.4	39.9	11.9
1969	175.0	5.6	30.5	119.9	20.7
1970	128.7	5.3	65.4	223.4	22.4
1971	180.2	5.2	37.0	134.9	35.6
1972	170.2	5.2	25.6	80.6	25.6
1973	96.7	4.7	33.1	87.8	21.4
1974	148.3	5.0	37.2	115.4	40.6
1975	148.2	4.7	45.7	145.6	45.0
1976	169.0	4.5	40.3	174.2	46.0
1977	144.6	5.2	36.1	142.3	24.8
1978	130.0	4.7	26.4	94.9	28.3
1979	107.2	5.3	51.9	174.9	34.0
1980	130.6	4.6	14.2	48.6	34.2
1981	77.9	4.3	15.4	53.9	12.5
1982	63.3	4.8	34.6	106.0	14.8
1983	69.5	4.5	32.1	105.9	15.6
1984	70.6	4.7	16.2	49.1	21.6
1985	94.9	5.3	20.7	61.2	34.9
1986	100.9	5.7	13.3	47.9	54.3
1987	105.4	5.2	7.9	18.6	32.9
1988	74.3	4.6	5.4	18.1	11.6
1989	58.4	4.7	8.9	17.9	6.4
1990	68.3	4.3	10.7	26.6	18.9
1991	58.3	5.4	23.7	79.5	7.2
1992	63.1	5.4	19.7	63.2	29.5
1993	19.2	4.8	13.7	42.8	3.8
1994	87.8	6.2	19.5	48.5	12.5
1995	78.9	5.6	11.8	48.7	6.7

Appendix 2. (Continued).

Year	Duck Brood Index[a]	Average Brood Size[b]	Mallard Late Nesting Index[c]	Duck Late Nesting Index[c,d]	Coot Brood Index
1996	129.3	5.9	34.0	133.0	63.5
1997	161.3	5.6	23.8	69.0	48.5
1998	67.3	5.5	26.6	86.0	19.8
10-year Average	79.9	5.2	17.1	54.8	20.9
Long-term Average	126.3	5.2	27.5	85.3	27.7
% Change:					
From 1998	-58	0	12	25	-59
From 10-year Average	-16	8	55	57	-5
From Long-term Average	-47	9	-3	1	-29

[a] Unadjusted for visibility bias.
[b] From complete Class II and III broods observed - all duck species.
[c] As indicated by observed adults pairs and singles.
[d] All duck species.
[e] Differences between indices reported here and in previous Saskatchewan Game Management Reports are a result of adjustments to correction factors made by the USFWS.

Appendix 3. Long-term trend in adjusted May pond estimates by stratum with comparisons against the previous year, the previous 10-year average, and the long-term average (estimates in thousands, 1961-99).

	Stratum						
Year	30	31	32	33	34	35	Total
1961	142.2	219.4	252.2	80.3	58.9	41.8	794.8
1962	160.3	383.4	311.1	45.2	269.4	59.9	1,229.3
1963	145.0	198.5	268.9	43.3	239.1	129.7	1,024.5
1964	196.9	357.3	322.6	64.7	481.8	394.0	1,817.2
1965	327.9	439.9	610.1	112.2	435.1	332.2	2,257.4
1966	350.8	587.3	595.1	133.0	569.7	388.5	2,624.3
1967	282.3	642.1	688.8	194.9	545.1	299.0	2,652.2
1968	231.4	329.6	404.2	65.1	123.6	58.5	1,212.4
1969	386.7	469.7	781.8	140.0	267.1	179.6	2,224.9
1970	278.1	603.7	733.4	102.6	721.3	518.1	2,957.2
1971	294.3	407.0	495.3	120.4	608.7	391.7	2,317.4
1972	349.1	646.2	357.2	63.1	546.0	302.8	2,264.4
1973	266.8	466.6	326.8	85.7	227.6	117.0	1,490.5
1974	427.6	836.7	755.0	122.9	943.1	460.9	3,546.2
1975	395.3	806.1	785.7	192.7	763.9	480.9	3,424.6
1976	201.9	399.0	553.4	96.8	656.6	670.8	2,578.5
1977	176.1	254.7	265.7	44.5	338.7	170.3	1,250.0
1978	274.1	393.6	566.4	161.6	545.5	280.7	2,221.8
1979	433.4	697.5	660.4	130.2	667.8	480.9	3,070.1
1980	265.4	311.3	358.2	48.1	273.3	137.2	1,393.6
1981	145.9	160.5	126.2	28.4	97.3	52.6	610.9
1982	283.6	629.7	704.5	119.0	247.5	210.4	2,194.7
1983	384.9	715.4	711.9	96.0	464.6	323.3	2,696.2
1984	283.1	548.4	266.9	35.2	260.3	131.9	1,525.8
1985	622.3	737.1	722.9	108.0	560.4	207.8	2,958.5
1986	343.8	402.5	615.2	112.8	529.1	346.3	2,349.7
1987	223.8	260.9	347.5	150.9	251.5	184.3	1,418.9
1988	217.6	378.7	149.1	37.1	213.8	63.4	1,059.7
1989	208.1	220.6	222.9	71.1	63.9	73.1	859.7
1990	213.0	284.9	277.1	56.8	453.6	97.4	1,382.8
1991	194.8	213.2	437.3	157.1	257.8	144.8	1,405.0
1992	247.9	376.4	349.8	34.5	378.3	229.1	1,616.0
1993	169.2	189.6	337.3	94.8	203	96.3	1,087.9
1994	407.3	564.7	742.9	178.0	472.3	288.0	2,653.1
1995	344.9	680.9	343.5	52.7	561.0	331.4	2,314.4
1996	408.3	666.9	1041.4	197.6	573.0	381.6	3,268.9
1997	461.6	497.4	972.1	163.4	578.1	319.5	2,992.0
1998	146.5	284.6	345.0	49.3	403.0	241.8	1,470.2
1999	313.1	344.4	807.0	93.5	614.9	362.3	2,535.3
10-year Average	280.0	397.9	506.9	105.5	394.4	220.3	1,905.0
Long-term Average	286.6	454.3	494.9	99.7	417.1	253.1	2,005.7
% Change:							
From 1999	114	21	134	90	53	50	72
From 10-year Average	12	-13	59	-11	56	65	33
From Long-term Average	9	-24	63	-6	47	43	26

Appendix 4. Saskatchewan duck hunting regulations, 1986-99.

Year	WMZs	Hunting Season Dates	Daily Bag Limit
1986	1-42, 44-47, 52	Sept. 15 - Dec. 13	6 (4 mallards only)
	43, 48-51, 53-76	Sept. 1 - Dec. 13	6 (4 mallards only)
1987	1-42, 44-47, 52	Sept. 14 - Dec. 12	6 (4 mallards only)
	43, 48-51, 53-76	Sept. 1 - Dec. 12	6 (4 mallards only)
1988	1-42, 44-47, 52	Sept. 12 - Dec. 10	5 (3 mallards)
	43, 48-51, 53-76	Sept. 1 - Dec. 10	5 (3 mallards)
1989	1-42, 44-47, 52	Sept. 11 - Dec. 9	5 daily (3 only may be mallards, 1 may be canvasback and 1 only may be pintail)
	43, 48-51, 53-76	Sept. 1 - Dec. 9	5 daily (3 only may be mallards, 1 may be canvasback and 1 only may be pintail)
1990	1-42, 44-47, 52	Sept. 17 - Dec. 15	5 daily (3 only may be mallards, 1 only may be canvasback and 1 only may be pintail)
	43, 48-51, 53-76	Sept. 1 - Dec. 15	5 daily (3 only may be mallards, 1 only may be canvasback and 1 only may be pintail)
1991	1-42, 44-46, 47 (south of Highways No. 3 and 26), 52	Sept. 16 - Dec. 14	5 daily (3 only may be mallards, 1 only may be canvasback and 1 only may be pintail)
	43, 47 (north of Highways 3 and 26), 48-51 and 53 to 76	Sept. 2 - Dec. 14	5 daily (3 only may be mallards, 1 only may be canvasback and 1 only may be pintail)
1992	1-42, 44-46, 47 (south of Highways No. 3 and 26), 52	Sept. 14 - Dec. 12	5 daily (3 only may be mallards, 2 only may be canvasback and 1 only may be pintail)
	43, 47 (north of Highways 3 and 26), 48-51 and 53 to 76	Sept. 1 - Dec. 12	5 daily (3 only may be mallards, 2 only may be canvasback and 1 only may be pintail)
1993	1-42, 44-46, 47 (south of Highways No. 3 and 26), 52	Sept. 13 - Dec. 11	5 daily (1 only may be pintail)
	43, 47 (north of Highways 3 and 26), 48-51 and 53 to 76	Sept. 1 - Dec. 11	5 daily (1 only may be pintail)
1994	1-42, 44-46, 47 (south of Highways No. 3 and 26), 52	Sept.12 - Dec. 10	5 daily (1 only may be pintail)
	43, 47 (north of Highways 3 and 26), 48-51 and 53 to 76	Sept. 1 - Dec. 10	5 daily (1 only may be pintail)
1995	South Game Bird District	Sept. 11 - Dec. 9	8 daily (1 only may be pintail)
	North Game Bird District	Sept. 1 - Dec. 9	
1996	South Game Bird District	Sept. 9 - Dec. 21	8 daily (1 only may be pintail)
	North Game Bird District	Sept. 2 - Dec 14	
1997	South Game Bird District	Sept. 8 - Dec. 20	8 daily (1 only may be pintail)
	North Game Bird District	Sept. 1 - Dec. 13	
1998	South Game Bird District	Sept. 7 - Dec. 12	8 daily (3 only may be pintail)
	North Game Bird District	Sept. 1 - Dec. 12	
1999	South Game Bird District	Sept. 1 - Dec. 11	8 daily (3 only may be pintail)
	North Game Bird District	Sept. 8 - Dec. 11	

Geese

by Don McKinnon

Review of the 1998 Hunting Season

- From 1991 to 1993, the goose harvest remained stable at approximately 123,000 birds. In 1998, there were 280,011 geese harvested, approximately the same as the previous year. Canada geese (136,736) comprised 66% of the harvest followed by lesser snow (68,985), white-fronted (51,204) and Ross' (23,086) geese, each contributing 33%, 18% and 11%, respectively, of the total harvest (Table 1).

Table 1. Goose harvest in Saskatchewan, 1986-98 (after CWS Progress Notes).

	Canada Geese		White-fronted Geese		Lesser Snow Geese		Ross' Geese		
Year	Number Harvested	% of Total	Number Harvested	% of Total	Number Harvested	% of Total	Number Harvested	% of Total	Total Harvested
1987	107,678	62	40,123	23	24,846	14	1,677	1	174,324
1988	79,828	65	20,369	17	21,438	17	1,324	1	122,959
1989	94,853	61	35,581	23	22,611	14	2,913	2	155,958
1990	95,403	59	27,309	17	33,160	21	5,814	4	161,686
1991	75,423	61	26,936	22	18,974	15	1,641	1	122,974
1992	78,860	64	21,617	18	21,043	17	1,322	1	122,842
1993	77,787	63	21,804	18	21,785	18	1,374	1	122,750
1994[a]	81,175	55	29,538	20	29,888	20	6,229	4	146,830
1995	79,909	49	44,146	27	31,152	19	7,200	4	162,407
1996	112,467	51	57,676	26	34,546	16	15,598	7	220,287
1997	104,934	48	37,326	17	62,635	29	14,441	7	219,336
1988-97 Avg.	88,064	57	32,230	21	29,723	19	5,786	4	155,803
1998	136,736	66	51,204	18	68,985	33	23,086	11	280,011
% Change:									
1998 from 1997		30		37		10		59	28
1998 from 10-yr Avg.		55		59		132		299	80

[a] Revised (June/96) estimates.

Population Status

- Populations of large Canada geese continue to thrive in agricultural Saskatchewan. Western Prairie (WPP) and Great Plains (GPP) populations have increased in recent years and are now above the upper regulatory threshold as outlined in the Central Flyway Tall Goose Plan. Hi-Line, Short Grass Prairie (SGP) and Tall Grass Prairie (TGP) populations are all at, or above, objectives identified in their respective Central Flyway management plans.
- Lesser snow and Ross' geese have steadily increased over the past few years and their populations are well above objectives established in Central Flyway management plans. The overpopulation of white geese is a major concern to wildlife managers and Saskatchewan hunters are encouraged to harvest more snow geese.
- Since the 1960s, mid-continent white-fronted geese have been managed as two separate sub-populations, commonly referred to as western and eastern segments. Preliminary results from recent neck banding studies indicated this designation may no longer be appropriate and, in future, white-fronts should be managed as one population.
- The Arctic Goose Joint Venture (AGJV) has given high priority to white-fronted goose research. Marking studies in the Canadian Arctic and Alaska are providing much needed data to better manage white-fronts.
- Saskatchewan Environment and Resource Management (SERM), CWS and the USFWS co-operated in September, 1992 to initiate a white-fronted goose survey in southern prairie Canada and on National Wildlife Refuges in the United States. Based on aerial and ground counts, the white-front population has varied between 625,847 (1992) and 1.1 million (1995) birds.

Rationale for 1998 Regulations

- In 1993, the three additional snow or Ross' goose (three daily, six possession) bag limit in eastern Saskatchewan was moved forward, from mid-October to season opening. In 1994 and 1995, the three additional daily bag took effect on opening day in all zones. These changes were implemented to provide more recreational hunting on snow geese, a species well above population objectives.
- In 1995, the province was divided into a North Game Bird District (NGBD) and a South Game Bird District (SGBD). The NGBD is currently comprised of WMZs 43 and 47 to 76 and the SGBD is comprised of WMZs 1 to 42 and 44 to 46.
- Regulatory changes in 1996 included opening the goose hunting season in the SGBD, for all species except white-fronts, on September 1 (September 2, 1996) and establishment of separate bag limits for dark (Canada and white-fronted) and white (Snow and Ross') geese. The dark goose limit was six daily, of which not more than three could be white-fronted geese. The white goose bag limit was set at 10 daily.
- In 1997, all day white goose hunting in WMZs 21 and 37 to 41 started on October 1 rather than the Monday nearest October 22 (Appendix 1).

1999 Goose Seasons

Wildlife Management Zones Open	Season Dates (Inclusive)	Bag Limit
North Game Bird District including Clearwater River, Wildcat Hill Greenwater Lake, Lac La Ronge, Meadow Lake, Narrow Hills and Clarence-Steepbank Lakes Provincial Parks; Fort a la Corne and Horsehide Lake Wildlife Management Units; and Bronson Forest and Round Lake Recreation Sites		**Separate Bag Limits**
All Hunters	Sept. 1 - Dec. 12	**Dark Geese:** daily limit of 8 dark geese which includes both Canada and White-fronted geese. **Hunters Note:** the daily bag of dark geese may not include more than 5 white-fronted geese. **Possession:** 2 times daily limit
South Game Bird District including Valeport Wildlife Management Unit; and that portion of Douglas Provincial Park located west of Diefenbaker Lake (Qu'Appelle Arm) and starting Sept. 22, Last Mountain Lake National Wildlife Area		**White Geese:** daily limit of 10 white geese including any combination of Snow (Blue) and Ross' geese totaling 10. **Possession:** 3 times daily limit
Residents of Saskatchewan		
- all geese except white-fronted Geese	Sept. 1 - Dec. 12	
- white-fronted Geese	Sept. 7 - Dec. 12	
Canadian Residents and Non-Residents of Canada		
white geese	Sept. 1 - Dec. 12	
dark geese	Sept. 21 - Dec. 12	

Before October 19, hunting of all geese is resricted to morning only (one-half hour before sunrise to 12:00 noon) in the South Game Bird District and WMZs 43, 48 to 59 and 67 to 69 in the North Game Bird District. EXCEPTION: Beginning October 1 in WMZs 21 and 37 to 41, white geese (snow [blue] and Ross') may be hunted all day.
All day hunting for all geese begins October 19.

Appendix 1. Saskatchewan goose hunting regulations, 1988-99 (hunting season details omitted for local closures, Wildlife Management Zones and Provincial Parks).

Year	Wildlife Management Zones	Hunting Season Dates	*Daily Bag Limit*
1988	1-14, 19, 22-29	Sept. 21 - Dec. 10	5 (2 whitefronts)
	15-18, 20, 21, 30-42, 44-47, 52	Sept. 14 - Dec. 10	5 (3 whitefronts)
	43, 48-51, 53-76	Sept. 1 - Dec. 10	5 (3 whitefronts)
	1-59, 67-69	Sept. 1 - Oct. 23	Morning Hunting Only
	15-18, 20-22, 30-43, 48-76	Sept. 28 - Dec. 10	3 Additional Snow or Ross' Geese
	1-14, 19, 23-29, 44-47	Oct. 15 - Dec. 10	3 Additional Snow or Ross' Geese
1989	1-14, 19, 22-29	Sept. 20 - Dec. 9	5 (2 whitefronts)
	15-18, 20, 21, 30-42, 44-47, 52	Sept. 13 - Dec. 9	5 (3 whitefronts)
	43, 48-51, 43-76	Sept. 1 - Dec. 9	5 (3 whitefronts)
	1-59, 67-69	Sept. 1 - Oct. 21	Morning Hunting Only
	15-18, 20-22, 30-43, 48-76	Sept. 27 - Dec. 9	3 Additional Snow or Ross' Geese
	1-14, 19, 23-29, 44-47	Oct. 14 - Dec. 9	3 Additional Snow or Ross' Geese
1990	1-14, 19, 22-29	Sept. 26 - Dec. 15	5 (2 whitefronts)
	15-18, 20, 21, 30-42, 44-47, 52	Sept. 19 - Dec. 15	5 (2 whitefronts)
	43, 48-51, 53-76	Sept. 1 - Dec. 15	5 (3 whitefronts)
	1-59, 67-69	Sept. 1 - Oct. 20	Morning Hunting Only
	15-18, 20-22, 30-43, 48-76	Oct. 3 - Dec. 15	3 Additional Snow or Ross' Geese
	1-14, 19, 23-29, 44-47	Oct. 15 -Dec. 15	3 Additional Snow or Ross' Geese
1991	1-14, 19, 22-29	Sept. 25 - Dec. 14	5 (2 whitefronts)
	15-18, 20, 21, 30-42, 44-46, 47 (south of Highways No. 3 and 26), 52	Sept. 18 - Dec. 14	5 (3 whitefronts)
	43, 47 (north of Highways No. 3 and 26), 48-51, 53-76	Sept. 2 - Dec. 14	5 (3 whitefronts)
	1-59, 67-69	Sept. 1 - Oct. 19	Morning Hunting Only
	15-18, 20-22, 30-43, 48-76	Oct. 2 - Dec. 14	3 Additional Snow or Ross' Geese
	1-14, 19, 23-29, 44-47	Oct. 15 - Dec. 14	3 Additional Snow or Ross' Geese
1992	1-14, 19, 22-29	Sept. 23 - Dec. 12	5 (2 whitefronts)
	15-18, 20, 21, 30-42, 44-46, 47 (south of Highways No. 3 and 26), 52	Sept. 16 - Dec. 12	5 (3 whitefronts)
	43, 47 (north of Highways No. 3 and 26), 48-51, 53-76	Sept. 1 - Dec. 12	5 (3 whitefronts)
	1-59, 67-69	Sept. 1 - Oct. 17	Morning Hunting Only
	15-18, 20-22, 30-43, 48-76	Sept. 30 - Dec. 12	3 Additional Snow or Ross' Geese
	1-14, 19, 23-29, 44-47	Oct. 15 - Dec. 12	3 Additional Snow or Ross' Geese
1993	1-14, 19, 22-29	Sept. 22 - Dec. 11	5 (2 whitefronts)
	15-18, 20, 21, 30-42, 44-46, 47 (south of Highways No. 3 and 26), 52	Sept. 15 - Dec. 11	5 (3 whitefronts)
	43, 47 (north of Highways No. 3 and 26), 48-51, 53-76	Sept. 1 - Dec. 11	5 (3 whitefronts)
	1-59, 67-69	Sept. 1 - Oct. 16	Morning Hunting Only
	15-18, 20-22, 30-43, 48-76	Starting opening day	3 Additional Snow or Ross' Geese
	1-14, 19, 23-29, 44-47	Oct. 18 - Dec. 11	3 Additional Snow or Ross' Geese
1994	1-14, 19, 22-29	Sept. 19 - Dec. 10	5 (2 whitefronts)
	15-18, 20, 21, 30-42, 44-46, 47 (south of Highways No. 3 and 26), 52	Sept. 12 - Dec. 10	5 (3 whitefronts)
	43, 47 (north of Highways No. 3 and 26), 48-51, 53-76	Sept. 1 - Dec 10	5 (3 whitefronts)
	1-59, 67-69	Sept. 1 - Oct. 22	Morning Hunting Only
	All Zones	Starting opening day	3 Additional Snow or Ross' Geese

Appendix 5. (Continued).

1995	South Game Bird District North Game Bird District	Sept. 11 - Dec. 9 Sept. 1 - Dec. 9	9 daily of which not more than 6 may be dark (Canadas and whitefronts) geese and of these not more than 3 may be whitefronts. Morning hunting only until Oct. 23
1996	South Game Bird District **Residents of Saskatchewan** - all geese except White-fronted geese White-fronted geese **Canadian Residents and Non-residents of Canada** North Game Bird District (all geese, all residencies)	Sept. 2 - Dec. 14 Sept. 9 - Dec. 14 Sept. 16 - Dec. 14 Sept. 2 - Dec. 14	**Separate Bag Limits** **Dark Geese**: daily limit of 6 dark geese which includes both Canada and white-fronted geese (not more than 3 may be white-fronted geese) **White Geese**: daily limit of 10 white geese including any combination of Snow (Blue) and Ross' totalling 10 Morning hunting only before Oct. 21
1997	South Game Bird District **Residents of Saskatchewan** - all geese except White-fronted geese White-fronted geese **Canadian Residents and Non-residents of Canada** North Game Bird District (all geese, all residencies)	Sept. 1 - Dec. 13 Sept. 8 - Dec. 13 Sept. 15 - Dec. 13 Sept.1 - Dec. 13	**Separate Bag Limits** **Dark Geese (Canada and White-fronted Geese)**: daily limit of 6 of which only 3 may be White-fronted geese **White Geese (Snow [blue] and Ross' Geese)**: daily limit a combination of 10 geese Morning hunting only before Oct. 20. Exception: Beginning Oct. 1 in WMZs 21 and 37 to 41, white geese may be hunted all day
1998	South Game Bird District **Residents of Saskatchewan** - all geese except White-fronted geese White-fronted geese **Canadian Residents and Non-residents of Canada** white geese dark geese North Game Bird District (all geese, all residencies)	Sept. 1 - Dec.1 2 Sept. 7 - Dec. 12 Sept. 1 - Dec. 12 Sept. 21 - Dec. 12 Sept. 1 - Dec. 12	**Separate Bag Limits** **Dark Geese (Canada and White-fronted Geese)**: daily limit of 8 of which only 5 may be White-fronted geese **White Geese (Snow [blue] and Ross' Geese)**: daily limit a combination of 10 geese Morning hunting only before Oct. 19. Exception: Beginning Oct. 1 in WMZs 21 and 37 to 41, white geese may be hunted all day
1999	South Game Bird District **Residents of Saskatchewan** - all geese except White-fronted geese White-fronted geese **Canadian Residents and Non-residents of Canada** white geese dark geese North Game Bird District (all geese, all residencies)	Sept. 1 - Dec. 12 Sept. 7 - Dec. 12 Sept. 1 - Dec. 12 Sept. 21 - Dec. 12 Sept. 1 - Dec. 12	**Separate Bag Limits** **Dark Geese (Canada and White-fronted Geese)**: daily limit of 8 of which only 5 may be White-fronted geese **White Geese (Snow [blue] and Ross' Geese)**: daily limit a combination of 10 geese Morning hunting only before Oct. 19. Exception: Beginning Oct. 1 in WMZs 21 and 37 to 41, white geese may be hunted all day

Sandhill Cranes

by Don McKinnon

Review of the 1998 Hunting Seasons

- The crane harvest in 1998 was 8,636 birds, an increase of 87% and 89% from 1997 and the 10-year average (Table 1).

Table 1. Estimated harvest of sandhill cranes in Saskatchewan, 1987-98 (after CWS Progress Notes and interim data via H. Levesque, CWS Ottawa).

Year	Population Estimate	Harvest
1987	416,500	4,522
1988	471,200	4,991
1989	393,900	2,318
1990	438,700	3,822
1991	341,700	3,594
1992	420,100	4,494
1993	446,900	2,310
1994[a]	494,200	3,259
1995	363,300	4,638
1996	531,500	2,961
1997	550,900	4,622
1988-97 Average	445,200	4,565
1998	544,500	8,636
% Change:		
1998 from 1997	-1	87
1998 from 10-year Average	22	89

[a] Revised (June/96) estimates.

Population Status

- Based on the 1998 Co-ordinated Spring Mid-Continent Sandhill Crane Survey, the crane population was estimated at 544,500 birds, a decrease of 1% from the 1997 estimate of 550,900 and remains 22% above the 10-year (1988-97) average.
- In 1991, the USFWS expressed concern over the sandhill crane harvest as it exceeded guidelines identified in the Central Flyway Management Plan (CFMP) in 4 of the past 5 years. Guidelines in the plan limited the crane harvest, including 20% crippling loss, in Canada, United States and Mexico to 25,000 birds. The CFMP was revised in 1993 and distributed to the public, non-government organizations and flyway representatives for comment. The population objective was changed from 350,000-450,000 birds to 343,000-465,000 (when the 3-year running average is within 15% of the 1982-91 average of 391,455 birds) cranes. Harvest guidelines were revised from 25,000 birds to a harvest index which would not exceed 7% of the most recent 3-year running average.

Rationale for 1999 Regulations

- Changes to the 1993 Sandhill Crane season included a September 1 opening in all zones, the addition of WMZs 25 to 28 and 45 to 46 and, with exception of seven core zones (WMZs 21 to 23, 29, 30, 41 and 44) to protect migrating whooping cranes, the hunting season was extended to September 30. The crane season in the seven core areas closed on September 15. In 1994 the crane season was extended geographically to include WMZs 9 and 10.
- For the first time since Sandhill Cranes were included in Appendix II of the CITES treaty, non-residents of Canada were permitted to hunt Sandhill Cranes in 1995. CITES permits were distributed to appropriate SERM district offices to be issued by the Conservation Officers.
- In 1995, the crane season was expanded geographically to include WMZs 43, 48 to 49 and 56 to 60 in east-central Saskatchewan.
- For simplicity, the crane season was expanded in 1996 to include all WMZs.
- The 1997 Sandhill Crane season was extended to September 30 in all WMZs.
- In 1998, Sandhill Crane seasons will be extended to Dec. 12 in all WMZs to coincide with the closing of the goose hunting season.
- No changes were made to Sandhill Crane seasons in 1999.

1998 Sandhill Crane Seasons

All Hunters

Wildlife Management Zones Open	Season Dates (Inclusive)	Bag Limit
North and South Game Bird Districts	Sept. 1 - Dec. 12	5 daily Possession: 2 times daily limit

Upland Birds

by A.A. Arsenault

1.0 Long-term Management Objectives

- Long-term population objectives have not been determined for any upland bird species.
- Once conservation needs are met, to provide priority allocation for subsistence needs.
- To obtain the informed consent of all potentially affected interests in structuring population objectives, management strategies and regulations.

2.0 Population Status

2.1 Provincial Overview

Sharp-tailed Grouse *(Pediocetes phasianellus)* spring breeding population surveys conducted in spring of 1999 indicate a decline in the grassland and parkland breeding population density (see section 2.3.1). This may in part have been due to the increased harvest rate (harvest/zone hunter), increased hunter success (harvest/hunter-day) and overall increase in hunter numbers in 1998 relative to 1997 (see section 2.4.1.2). Provincially, harvest in 1998 was 7% below the 10-year average. Reproduction index (# young/adult) decreased (6%) recruitment of young into the breeding population in 1998 compared to 1997.

Ruffed Grouse *(Bonasa umbellus)* populations were believed to be on the down side of their cycle in 1997. However, the harvest rate (harvest/zone hunter) and hunter success (harvest/hunter-day) were substantially higher than in 1997 and the 10-year average (see section 2.4.1.2). This suggests the population was still near the peak of its cycle in 1998.

Spruce Grouse *(Canachites canadensis)* populations tend to mimic those of ruffed grouse. This is also reflected in the harvest rate and hunter success rate for this species in 1998 (see section 2.4.1.2).

Hungarian (Gray) Partridge *(Perdix perdix)* harvest rate (harvest/zone hunter) and hunter success rate (harvest/hunter-day) were substantially less relative to 1997 and slightly less than the 10-year average, although this is probably a reflection of the large increase in zone hunters relative to 1997 (see section 2.4.1.2). Provincially, the 1998 harvest was larger than in 1997 and less than the 10-year average. The 1998 spring breeding population surveys indicated an increase in density of breeding pairs in 1998 (see section 2.3.2). The reproduction index (based on wing samples) indicates a low recruitment of young into the 1998 breeding population relative to the early 1990s, but was higher than in 1997.

Ring-necked Pheasant *(Phasianus colchicus)* breeding population surveys conducted in spring of 1998 indicated a higher density of breeding pairs relative to 1997 (see section 2.3.3). The harvest rate (harvest/zone hunter) and hunter success rate (harvest/hunter-day) were greater in 1998 relative to 1997 but were substantially below the 10-year mean (see section 2.4.1.2). These indices suggest that the population in 1998 was higher than in 1997 but was lower than the 10-year average.

2.2 Biological Data Collection

2.2.1 Reproduction Index

Wing samples were collected from a sample of hunters to assess reproductive success (# young/adult) of sharp-tailed grouse and Hungarian partridge. No samples were collected to assess ruffed grouse, spruce grouse, or pheasant.

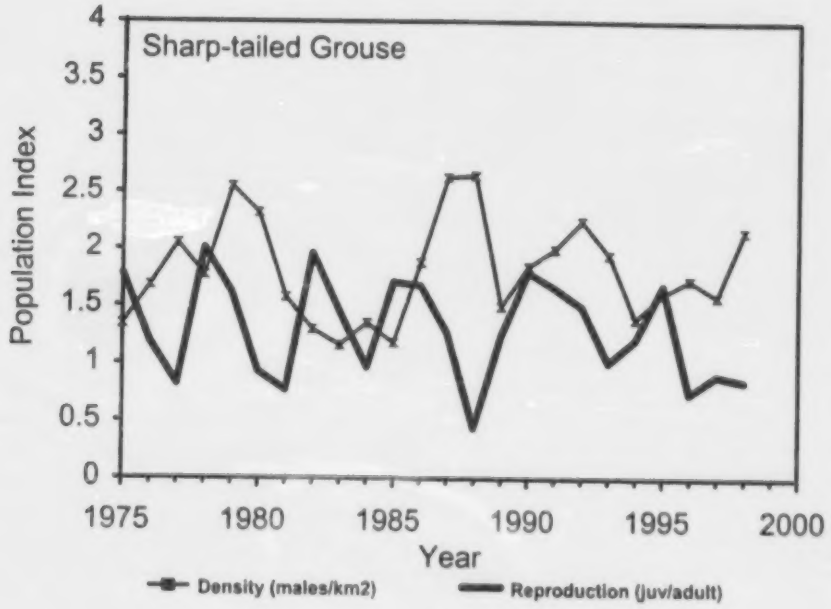
2.2.1.1 Sharp-tailed Grouse

Wing samples collected in 1998 (n = 253) indicate an slight decrease in reproduction index compared to 1997 (Table 1). Figure 1 compares the long term reproductive success to the breeding population density.

Table 1. Sharp-tailed grouse reproduction index by ecozone, 1988-98.

	Reproduction Index (# young/adult)				
Year	Grassland	Farmland	Parkland	Forest	Province
1988	0.32	0.14	0.51	1.75	0.44
1989	1.43[a]	0.29	2.71	3.86	1.24
1990	1.50	2.23	1.67	—	1.80
1991	2.24	1.66	1.36	1.50[a]	1.66
1992	1.11	1.81	1.45	—	1.50
1993	0.46[a]	1.10	1.60[a]	—	1.01
1994	0.72[a]	1.62	0.83[a]	1.00[a]	1.21
1995	2.55	1.55	2	0.80[a]	1.68
1996	1.15	0.68	.52[a]	0.50[a]	0.74
1997	1.00[a]	1.00	0.75	1.00[a]	0.90
1998	0.27[a]	0.87	0.86	3.00[a]	0.85

[a] n < 50 wings.



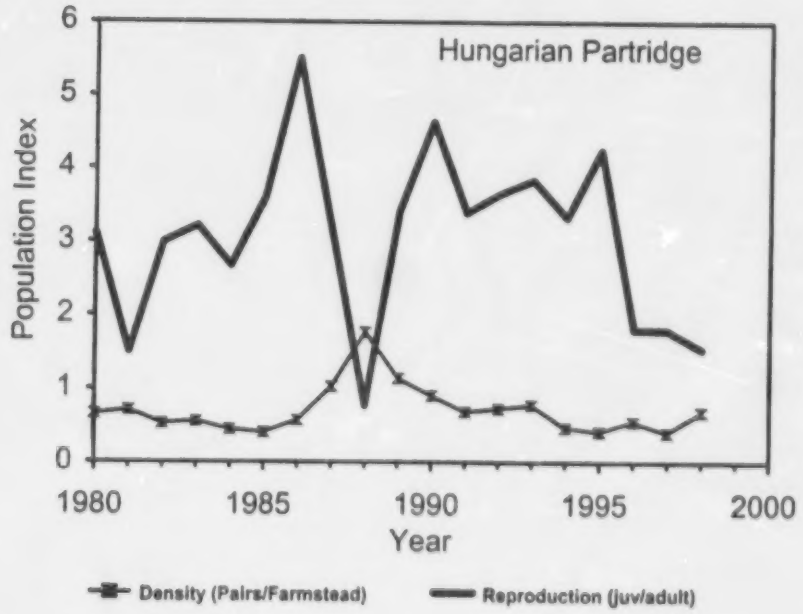


Figure 1. Comparison of annual reproductive success to provincial breeding population densities.

2.2.1.2 Hungarian Partridge

The provincial reproduction index increased from 1.48 in 1997 to 1.70 in 1998, based on a sample of 186 wings (Table 2). Figure 1 compares the long term reproductive success to the breeding population density.

Table 2. Hungarian partridge reproduction index, 1988-98.

Year	Reproduction Index (# young/adult)			
	Grassland	Farmland	Parkland	Province
1988	0.67	0.94	0.72[a]	0.77
1989	8.00[a]	2.52	6.00	3.42
1990	2.77	4.97	7.24	4.63
1991	3.32	3.37	3.71	3.39
1992	4.49	3.26	3.28[a]	3.65
1993	5.57[a]	3.93	3.20[a]	3.84
1994	3.00[a]	2.63	24.00[a]	3.33
1995	5.36	4.82	3.86[a]	5.02
1996	1.68	2.19	2.33[a]	1.92
1997	1.25[a]	1.60	1.22[a]	1.48
1998	1.32	3.00	3.25[a]	1.70

[a] Sample less than 50 wings.
[b] Years with samples less than 50 wings not included in average.

2.3 Breeding Population Surveys

Spring surveys were conducted in 1999 for sharp-tailed grouse, but not for Hungarian partridge, pheasant, ruffed grouse, or spruce grouse.

2.3.1 Sharp-tailed Grouse

Surveys of sharp-tailed grouse leks were conducted in 18 survey areas (Table 3). Survey results indicate the provincial average decreased by 28%, from 2.16 males/km^2 in 1998 to 1.55 males/km^2 in 1999 (Table 3).

Table 3. Sharp-tailed grouse breeding population surveys, April to May, 1995-99[a].

Ecozone and WMZ	Survey Area	Area Surveyed (km^2)	# male sharp-tailed grouse/km2 1995	1996	1997	1998	1999	% Change from 1998
Grassland								
4	Meyronne	41.4	0.75	0.65	0.56	1.47	0.99	
5	Turkey Track	41.4	1.30	0.92	0.70	1.16	—	
9	Bowles Ranch	49.2	1.87	3.37	4.31	1.48	2.09	
10	McKnight	41.4	1.86	2.05	3.02	1.57	—	
10	North Great Sandhills	49.2	2.83	2.76	4.59	1.85	—	
15	Estevan-Cambria	69.3	1.02	1.79	1.59	1.56	1.15	
15	Goodwater	46.6	3.24	2.24	3.05	2.12	—	
16	Wellington	49.2	3.76	2.50	2.66	4.19	—	
17	Strawberry Lakes	41.4	0.98	0.85	0.34	0.63	—	
19	Mortlach	49.2	1.99	1.12	2.32	1.40	2.01	
19	Val Jean	33.0	3.88	3.03	5.46	5.06	3.47	
20	Bethune	62.0	0.62	0.66	0.77	1.33	1.18	
21	Gibbs	41.4	1.35	1.74	2.00	1.59	1.91	
21	Last Mtn. Lake	62.2	1.90	1.06	—	2.04	1.70	
23	Elbow WMU	41.4	4.18	3.19	2.71	3.45	3.26	
24	Beechy	62.1	0.85	0.77	0.85	0.63	—	
24	Coteau	64.8	1.96	1.19	1.05	1.96	—	
26	Alsask	49.2	1.93	2.95	1.91	2.09	—	
27	Mariposa	66.4	1.07	1.84	2.05	2.86	2.33	
Grassland Total		960.8	1.69	1.84	1.75	2.53	1.91	-24.5
Parkland								
28	Duperow	36.3	2.48	3.31	5.07	1.35	1.02	
29	Goose Lake	55.6	1.17	2.27	2.05	—	0.59	
30	Asquith	31.1	—	1.09	2.54	1.54	1.29	
31	Coalfields	43.4	—	0.69	1.08	0.65	—	
33	Tecumseh	51.8	1.35	0.66	0.60	1.51	—	
34	Moosomin	69.9	—	0.92	1.14	—	0.90	
39	Goodspirit	41.4	0.52	0.41	0.31	0.73	0.56	
40	Quill Lakes	41.4	—	—	1.14	1.21	1.21	
41	Wolverine	62.1	2.21	1.79	2.16	1.58	1.79	
45	Aroma Lake	46.6	1.01	0.92	1.09	1.16	1.14	
Parkland Total		479.6	1.27	1.53	1.31	1.46	1.07	-33.1
Provincial Total		1440.4	1.61	1.73	1.59	2.16	1.55	-28.2

a Table formatted to new ecoregions

2.3.2 Hungarian Partridge

Hungarian partridge breeding population surveys were conducted on a sample of 210 abandoned farmsteads from April 15 to May 15. The provincial breeding index decreased from 0.51 pairs/farmstead in 1996 to 0.43 in 1997 (Table 4). WMZs 2 and 9 had the highest density index of zones sampled. There were no surveys conducted in 1999.

Table 4. Hungarian partridge breeding population surveys, spring 1997-98.

Ecozone and WMZ	1997 Density (Pairs/Farmstead)	1997 Farmsteads Surveyed	1998 Density (Pairs/farmstead)	1998 Farmsteads Surveyed	% Change from 1997
Grassland					
1	0.60	15	1.07	15	78
2	1.22	18	2.11	18	73
4	0.00	11	0.60	15	100
5	0.57	21	1.29	21	126
9	1.27	15	1.07	15	-16
10	0.57	14	0.73	11	28
15	0.10	20	0.26	19	160
16	0.10	20	0.28	18	180
18	0.00	14	0.07	14	100
19	—	—	0.35	17	—
21	—	—	—	—	—
23	0.10	10	1.10	10	1000
24	0.60	20	0.61	18	2
28	–	–	0.41	17	—
Average	**0.47**	**n = 193**	**0.77**	**n = 208**	**64**
Parkland					
17	0.20	15	0.18	11	—
31	0.06	17	0.15	20	—
Average	**0.06**	**17**	**0.16**	**31**	**167**
Province	**0.43**	**n = 210**	**0.69**	**n = 239**	**60**

2.3.3 Pheasant

Ten spring pheasant survey routes were completed. The provincial breeding index of 2.79 crows/survey stop in 1998 demonstrated a 17% increase compared that in 1997 (Table 5). No surveys were conducted in 1999.

Table 5. Cock pheasant breeding population surveys, spring 1992-98[a].

WMZ	Survey Route	# Pheasant crows/survey stop 1992	1993	1994	1995	1996	1997	1998	% Change from 1997
2	Val Marie	3.00	0.95	0.50	3.00	2.15	3.80	6.85	80
4	Woodrow Southwest	4.75	4.05	3.70	7.45	9.20	2.55	3.25	27
4	Notekeu Creek	2.15	4.20	1.70	1.40	2.20	—	0.85	—
5	Swift Current-Duncairn	2.80	2.20	0.80	3.65	3.10	1.75	0.85	-51
5	Cadillac-Ponteix	—	2.53	1.42	2.11	2.47	0.68	2.30	238
6	Ravenscrag-Eastend	3.07	1.23	2.77	1.46	2.57	4.36	7.46	71
8	Maple Creek North	2.13	0.93	—	1.53	2.00	2.40	2.47	3
15	Radville East	4.90	5.60	1.65	3.70	2.50	1.35	2.45	81
15	Marienthal	5.70	14.45	4.35	4.85	5.05	2.60	1.40	-46
31	Estevan	—	1.05	1.65	2.85	3.95	2.45	1.55	-37
Total[b]		3.66	3.89	2.23	3.32	3.62	2.38	2.79	17

[a] Not all routes for years prior to 1995 are listed.

[b] Total pheasant crows heard per total survey stops is an average of the routes surveyed and may not necessarily represent the provincial average.

2.4 Mortality

2.4.1 Licenced Harvest

2.4.1.1 Licence Sales

Upland bird licence sales in 1998 increased almost 11% compared to 1997 (Table 6).

Table 6. Provincial game bird licence sales, 1995 - 1998.

	1995	1996	1997	1998	% Change from 1997
Saskatchewan Resident	21,374	18,064	17,150	19,154	10.5
Canadian Resident	1,643	1,756	1,689	1,749	3.4
Non-resident	4,977	5,994	6,886	7,964	13.5
Total Sales	27,994	25,814	25,725	28,867	10.9

2.4.1.2 Hunting Activity and Harvest

Table 7 summarizes hunter activity and harvest by species. Figure 2 illustrates long-term trends in upland bird harvest and hunter numbers. Table 8 summarizes the 1998 harvest and harvest pressure by ecozone for each species. Appendix 1 through 5 summarize hunting activity by ecozone and WMZ for each upland bird species.

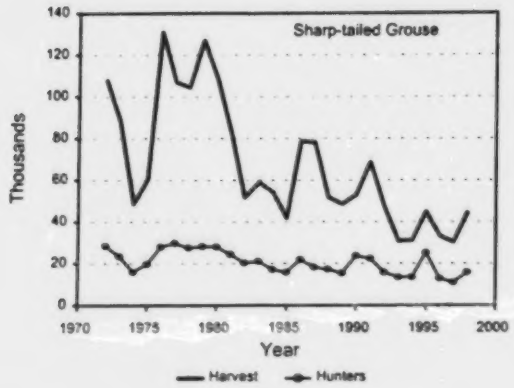
Table 7. Hunting activity and harvest of upland birds for Saskatchewan, 1988-98.

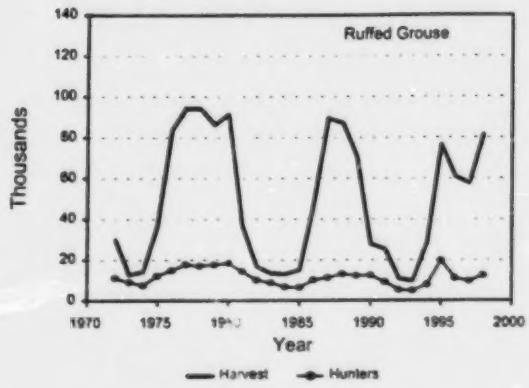
Species/Activity	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	10-yr Avg	1998	% Change from 1997	% Change from 10-yr Avg
Sharp-tailed Grouse														
Zone Hunters [a]	17,240	15,368	23,626	22,408	15,764	13,413	13,485	25,011	12,942	10,899	17,016	15,824	45	-7
Hunter-days	19,796	n/a	34,564	33,122	24,469	21,729	18,693	27,643	18,521	15,819	23,817	22,218	40	-7
Harvest	51,725	48,502	53,010	68,490	47,060	30,783	31,168	44,827	33,254	30,140	43,896	44,275	47	1
Harvest/Zone Hunter	3.0	3.2	2.2	3.0	3.0	2.1	2.3	1.8	2.6	2.8	2.6	2.8	1	8
Harvest/Hunter-day	2.6	n/a	1.5	2.1	1.9	1.4	1.7	1.6	1.8	1.9	1.8	2.0	5	8
Ruffed Grouse														
Zone Hunters [a]	13,012	12,180	12,421	9,183	5,334	4,959	7,827	19,546	11,130	9,560	10,515	12,374	29	18
Hunter-days	21,620	n/a	17,201	12,881	7,229	6,990	6,519	22,326	17,833	15,819	14,269	19,729	25	38
Harvest	87,065	70,781	27,774	25,355	10,909	9,685	28,464	76,241	60,904	57,592	45,477	81,143	41	78
Harvest/Zone Hunter	6.7	5.8	2.2	2.8	2.0	2.0	3.6	3.9	5.5	6.0	4.3	6.6	9	52
Harvest/Hunter-day	4.0	n/a	1.6	2.0	1.5	1.4	4.4	3.4	3.4	3.6	3.2	4.1	13	29
Spruce Grouse														
Zone Hunters [a]	4,884	4,687	3,061	1,587	872	848	1,798	5,423	2,585	3,547	2,929	2,559	-28	-13
Hunter-days	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4,381	3,597	3,989	3,572	-1	-10
Harvest	15,332	10,297	4,030	3,969	2,213	2,617	6,512	18,648	13,233	11,356	8,821	10,618	-7	20
Harvest/Zone Hunter	3.1	2.2	1.3	2.5	2.5	3.1	3.6	3.6	5.1	3.3	3.0	4.1	30	38
Harvest/Hunter-day	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3.0	3.2	2.2	3.0	-6	34

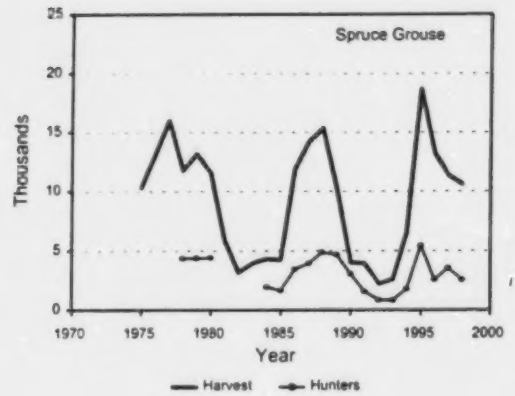
Table 7. (Continued)

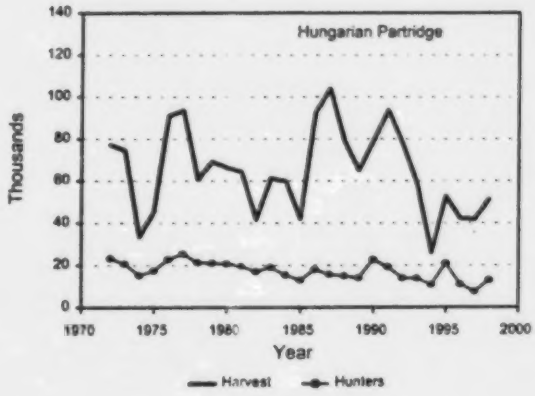
Species/Activity	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	10-yr Avg	1998	% Change from 1997	% Change from 10-yr Avg
Hungarian Partridge														
Zone Hunters [a]	14,962	14,000	22,595	19,267	13,943	13,749	10,771	20,957	11,015	7,644	14,890	12,910	69	-13
Hunter-days	21,311	n/a	34,511	29,437	22,832	21,719	15,164	22,372	16,494	11,804	21,738	18,808	59	-13
Harvest	78,621	65,014	79,204	93,626	77,631	58,839	25,992	52,505	42,289	41,768	61,549	51,177	23	-17
Harvest/Zone Hunter	5.3	4.6	3.5	4.8	5.6	4.3	2.4	2.5	3.8	3.4	4.1	4.0	-27	-4
Harvest/Hunter-day	3.6	n/a	2.3	3.2	3.4	2.7	1.7	2.3	2.6	2.2	2.8	2.7	-23	-4
Pheasant														
Zone Hunters [a]	4,491	4,098	5,322	5,526	4,328	3,373	3,714	8,368	3,990	2,147	4,536	1,731	-19	-62
Hunter-days	5,170	n/a	8,330	9,313	7,230	5,547	5,373	9,667	6,805	3,463	6,766	2,490	-28	-63
Harvest	11,160	10,378	10,782	15,975	12,296	9,012	7,851	15,728	13,873	3,557	11,061	3,075	-14	-72
Harvest/Zone Hunter	2.3	2.5	2.0	2.9	2.8	2.7	2.1	1.9	3.5	1.7	2.4	1.8	7	-27
Harvest/Hunter-day	2.2	n/a	1.3	1.7	1.7	1.6	1.5	1.6	2.0	1.0	1.6	1.2	20	-24

[a] All hunter residencies pooled.









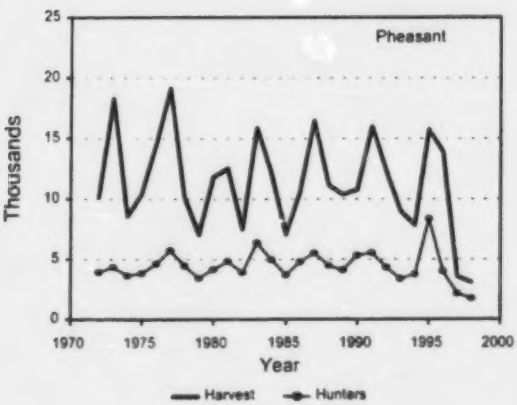


Figure 2. Long-term trends in upland bird harvest and hunter numbers, 1974 -98.

Table 8. Upland bird harvest activity by ecozone, 1998.

	Harvest				Hunter-days			
Species/Ecozone	Sask. Resident	Can-Resident	Non-Resident	Total	Sask. Resident	Can-Resident	Non-Resident	Total
Sharp-tailed Grouse								
Grassland	2,712	3,418	6,158	12,288	1,271	1,646	2,843	5,760
Farmland	7,017	1,139	10,047	18,203	3,916	818	5,149	9,883
Parkland	2,464	80	3,619	6,163	1,835	59	1,556	3,450
Forest Fringe	2,623	540	378	3,541	1,129	108	241	1,478
Forest	2,850	300	918	4,068	1,330	39	215	1,584
Northern Shield	0	0	0	0	49	0	0	0
Total	17,677	5,477	21,121	44,275	9,544	2,671	10,003	22,218
Ruffed Grouse								
Grassland	50	0	0	50	40	96	0	136
Farmland	583	0	102	685	304	58	51	413
Parkland	7,970	287	2,507	10,764	3,085	182	794	4,061
Forest Fringe	15,487	134	5,066	20,687	4,147	38	999	5,184
Forest	44,621	1,149	2,303	48,073	9,131	211	333	9,675
Northern Shield	121	0	0	121	80	0	0	80
Total	69,595	1,570	9,978	81,143	16,966	584	2,178	19,728
Spruce Grouse								
Grassland	10	0	0	10	10	0	0	10
Farmland	0	0	0	0	5	19	0	24
Parkland	179	0	51	230	144	0	25	169
Forest Fringe	1,334	19	51	1,404	447	10	76	533
Forest	8,404	440	0	8,844	2,646	86	0	2,732
Northern Shield	90	0	0	90	84	0	0	84
Total	10,057	460	101	10,618	3,356	115	101	3,572
Hungarian Partridge								
Grassland	4,320	6,584	13,148	24,052	1,533	1,874	4,058	7,465
Farmland	7,866	1,266	12,190	21,322	3,184	882	4,354	8,420
Parkland	2,126	58	2,555	4,739	1,336	30	1,102	2,468
Forest Fringe	431	19	0	450	197	10	27	234
Forest	294	0	319	613	113	0	108	221
Total	15,037	7,928	28,212	51,177	6,363	2,796	9,649	18,808
Pheasant								
Grassland	1,187	—	—	1,187	1,085	—	—	1,085
Farmland	1,635	—	—	1,635	1,243	—	—	1,243
Parkland	127	—	—	127	79	—	—	79
Forest Fringe	0	—	—	0	0	—	—	0
Forest	0	—	—	0	0	—	—	0
Total	2,948	—	—	2,948	2,406	—	—	2,406

3.0 Management Objectives and Strategies

Sharp-tailed Grouse

- Maintain season structure and bag limits until populations reach levels equal to or above the 10-year average. Season length and bag limits should remain the same as in 1998.
- Continue to monitor harvest, reproduction and spring breeding to assess population status.

Ruffed Grouse

- Bag limits in 1998 remained the same as in 1997. Liberal bag limits will be maintained during peak population levels.

Spruce Grouse

- Maintain current bag limits and season dates.

Hungarian Partridge

- Spring population surveys in 1998 indicated a 60% increase from 1997 but still well below the 10 year average. Season lengths and bag limits will remain unchanged.

Pheasant

- Bag and possession limits remain unchanged.
- Continue to monitor population using harvest information, spring breeding surveys and field reports.
- Pheasant populations are largely dependant upon weather conditions. Winter and spring weather conditions will continue to be monitored from Environment Canada weather reports.

4.0 Appendix

Appendix 1. Sharp-tailed grouse hunting activity and harvest by ecozone and WMZ, 1998.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.
Grassland												
1	89	40	158	59	20	159	247	400	972	98	217	536
2	40	59	158	30	59	159	59	440	1,675	39	148	805
3	20	20	53	20	20	0	59	20	0	25	20	107
4	149	79	421	109	79	319	297	400	756	206	227	456
5	99	20	263	79	20	213	247	100	1,242	182	20	456
6	60	20	210	59	20	213	148	20	918	69	10	295
7	30	20	53	10	20	53	10	60	54	29	10	27
8	20	40	53	20	40	53	59	180	270	20	30	54
9	129	99	0	89	99	0	495	420	0	177	355	0
10	149	159	0	118	99	0	307	460	0	128	286	0
11	109	99	0	109	79	0	257	280	0	93	89	0
12	20	20	0	10	20	0	30	60	0	15	30	0
13	119	139	105	109	99	106	346	460	216	88	148	81
14	99	79	53	49	40	53	148	120	54	103	59	27
Total	1,131	892	1,525	869	713	1,328	2,712	3,418	6,158	1,271	1,646	2,843
Farmland												
15	357	40	263	227	20	213	821	60	540	491	30	402
16	89	59	105	59	0	0	109	0	0	69	59	81
17	129	99	210	79	40	159	188	140	324	123	108	241
18	139	40	210	79	20	159	317	60	540	260	39	295
19	397	139	1,105	326	59	956	1,069	260	4,754	584	296	2,414
20	149	0	105	99	0	106	435	0	486	177	0	268
21	377	40	526	227	0	425	792	0	1,188	545	20	563
22	109	20	158	79	0	106	267	0	162	123	10	107
23	129	0	53	49	0	53	158	0	54	103	0	54
24	198	59	631	118	59	584	426	340	1,837	187	118	563
25	139	20	53	138	0	0	366	0	0	137	59	27
26	40	40	0	20	40	0	89	240	0	54	59	0
27	50	0	53	20	0	53	69	0	54	79	0	27
28	79	0	0	49	0	0	178	0	0	93	0	0
29	407	20	105	306	20	53	1,247	20	108	569	10	81
30	288	20	53	168	20	0	485	20	0	324	10	27
Total	3,075	595	3,629	2,043	277	2,869	7,017	1,139	10,047	3,916	818	5,149

Appendix 1. Continued.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.
Parkland												
31	40	0	210	30	0	213	59	0	1,080	25	0	322
32	69	0	105	39	0	53	129	0	432	74	0	188
33	20	0	158	10	0	0	40	0	0	29	0	188
34	50	20	0	30	0	0	30	0	0	39	10	0
35	50	0	0	20	0	0	30	0	0	74	0	0
36	89	0	53	49	0	53	79	0	54	162	0	27
37	139	0	0	49	0	0	79	0	0	255	0	0
38	10	0	53	0	0	0	0	0	0	5	0	27
39	99	0	0	59	0	0	99	0	0	147	0	0
40	30	20	158	20	20	106	40	40	270	39	10	134
41	119	0	158	49	0	106	89	0	432	103	0	161
42	40	0	0	30	0	0	109	0	0	34	0	0
43	40	0	53	39	0	53	59	0	810	25	0	161
44	69	0	0	49	0	0	129	0	0	79	0	0
45	317	0	210	247	0	159	861	0	324	402	0	215
46	50	0	53	10	0	53	10	0	162	64	0	54
47	218	20	53	178	20	53	624	40	54	280	39	81
Total	1,448	59	1,262	908	40	850	2,464	80	3,619	1,835	59	1,556
Forest Fringe												
48	50	0	53	39	0	53	287	0	54	196	0	54
49	159	59	105	148	59	106	772	240	270	221	59	107
50	198	40	105	178	40	53	574	300	54	250	49	81
51	20	0	0	0	0	0	0	0	0	10	0	0
52	50	0	0	20	0	0	89	0	0	39	0	0
53	69	0	0	59	0	0	198	0	0	74	0	0
54	79	0	0	69	0	0	218	0	0	191	0	0
55	109	0	0	109	0	0	485	0	0	147	0	0
Total	734	99	263	622	99	213	2,623	540	378	1,129	108	241

Appendix 1. Continued.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.
Forest												
56	69	0	53	39	0	53	148	0	432	69	0	161
57	30	0	105	10	0	106	49	0	486	29	0	54
58	0	0	0	0	0	0	0	0	0	0	0	0
59	50	20	0	30	20	0	119	160	0	147	20	0
60	20	0	0	20	0	0	49	0	0	39	0	0
61	10	0	0	0	0	0	0	0	0	5	0	0
62	40	0	0	30	0	0	40	0	0	39	0	0
63	89	0	0	89	0	0	297	0	0	103	0	0
64	89	0	0	69	0	0	218	0	0	118	0	0
65	89	0	0	89	0	0	168	0	0	93	0	0
66	169	0	0	158	0	0	643	0	0	250	0	0
67	79	0	0	79	0	0	356	0	0	98	0	0
68	30	0	0	30	0	0	218	0	0	49	0	0
69	60	20	0	59	20	0	89	140	0	49	20	0
70	10	0	0	10	0	0	30	0	0	39	0	0
71	10	0	0	0	0	0	0	0	0	15	0	0
72	20	0	0	20	0	0	49	0	0	29	0	0
73	40	0	0	39	0	0	376	0	0	157	0	0
Total	903	40	158	770	40	159	2,850	300	918	1,330	39	215
Northern Shield												
74	0	0	0	0	0	0	0	0	0	0	0	0
75	10	0	0	0	0	0	0	0	0	49	0	0
76	0	0	0	0	0	0	0	0	0	0	0	0
Total	10	0	0	0	0	0	0	0	0	49	0	0
Prov. Total	7,301	1,685	6,838	5,212	1,168	5,420	17,677	5,477	21,121	9,544	2,671	10,003

Appendix 2. Ruffed grouse activity by ecozone and WMZ, 1998.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.
Grassland												
1	0	19	0	0	0	0	0	0	0	0	96	0
2	10	0	0	10	0	0	20	0	0	15	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	10	0	0	10	0	0	20	0	0	5	0	0
6	10	0	0	0	0	0	0	0	0	10	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	10	0	0	10	0	0	10	0	0	5	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	10	0	0	0	0	0	0	0	0	5	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
Total	50	19	0	30	0	0	50	0	0	40	96	0
Farmland												
15	0	0	0	0	0	0	0	0	0	0	0	0
16	20	0	52	20	0	0	30	0	0	10	0	26
17	10	0	0	10	0	0	40	0	0	5	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	30	0	0	30	0	0	70	0	0	20	0	0
20	40	0	0	30	0	0	50	0	0	25	0	0
21	50	19	0	40	0	0	181	0	0	105	10	0
22	10	19	0	10	0	0	20	0	0	5	10	0
23	20	0	0	0	0	0	0	0	0	15	0	0
24	10	0	52	10	0	52	100	0	102	25	0	26
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	10	0	0	0	0	0	0	0	0	10	0	0
29	20	19	0	10	0	0	10	0	0	10	38	0
30	80	0	0	60	0	0	80	0	0	75	0	0
Total	300	57	104	219	0	52	583	0	102	304	58	51

Appendix 2. Continued.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask	Cdn.	Non-res.	Sask.	Cdn.	Non-res
Parkland												
31	0	0	52	0	0	52	0	0	51	0	0	26
32	10	0	0	10	0	0	30	0	0	10	0	0
33	60	0	52	50	0	0	362	0	0	85	0	26
34	20	19	0	20	0	0	30	0	0	15	10	0
35	90	19	0	60	0	0	181	0	0	115	19	0
36	60	0	0	40	0	0	100	0	0	150	0	0
37	360	38	0	319	38	0	1,467	57	0	628	58	0
38	30	0	0	20	0	0	40	0	0	35	0	0
39	260	38	52	229	38	52	1,266	172	51	484	77	26
40	10	0	104	10	0	52	10	0	307	5	0	77
41	40	0	52	40	0	52	70	0	205	35	0	51
42	240	0	157	219	0	105	925	0	718	334	0	333
43	190	0	52	180	0	52	945	0	307	304	0	77
44	50	0	52	40	0	52	231	0	205	45	0	51
45	210	0	0	170	0	0	693	0	0	314	0	0
46	60	0	0	50	0	0	60	0	0	60	0	0
47	360	19	52	319	19	52	1,558	57	665	469	19	128
Total	2,050	134	626	1,776	96	472	7,970	287	2,507	3,085	182	794
Forest Fringe												
48	700	0	52	609	0	52	3,769	0	563	1,012	0	154
49	630	19	313	579	0	314	4,512	0	3,173	1,107	10	513
50	360	19	209	319	19	210	1,889	96	870	488	19	205
51	60	0	0	50	0	0	261	0	0	110	0	0
52	160	0	0	140	0	0	462	0	0	125	0	0
53	190	0	0	170	0	0	1,116	0	0	329	0	0
54	360	0	52	329	0	52	1,930	0	102	638	0	26
55	250	19	52	229	19	52	1,548	38	358	339	10	103
Total	2,710	57	678	2,424	38	681	15,487	134	5,066	4,147	38	999

Appendix 2. Continued.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.
Forest												
56	880	19	104	818	19	105	7,808	383	1,126	1,660	58	128
57	470	0	0	429	0	0	5,196	0	0	952	0	0
58	100	0	0	90	0	0	502	0	0	95	0	0
59	650	19	0	599	0	0	5,135	0	0	987	10	0
60	190	0	52	190	0	52	1,487	0	481	289	0	77
61	50	0	0	50	0	0	231	0	0	40	0	0
62	210	0	0	180	0	0	2,050	0	0	334	0	0
63	290	0	0	279	0	0	1,980	0	0	588	0	0
64	220	0	0	190	0	0	1,507	0	0	279	0	0
65	230	0	0	209	0	0	1,407	0	0	379	0	0
66	380	19	52	359	19	52	5,407	77	205	798	19	26
67	660	19	104	618	19	105	6,351	153	512	1,411	38	103
68	240	0	0	209	0	0	2,241	0	0	486	0	0
69	200	38	0	190	38	0	1,900	211	0	369	29	0
70	100	19	0	100	19	0	422	96	0	185	19	0
71	70	19	0	40	19	0	221	230	0	70	38	0
72	60	0	0	60	0	0	251	0	0	65	0	0
73	90	0	0	80	0	0	653	0	0	194	0	0
Total	5,090	153	313	4,688	134	314	44,821	1,149	2,303	9,131	211	333
Northern Shield												
74	20	0	0	20	0	0	121	0	0	30	0	0
75	10	0	0	0	0	0	0	0	0	50	0	0
76	0	0	0	0	0	0	0	0	0	0	0	0
Total	30	0	0	20	0	0	121	0	0	80	0	0
Prov. Total	10,231	421	1,722	9,157	268	1,520	69,595	1,570	9,978	16,966	584	2,178

Appendix 3. Spruce grouse hunting activity by ecozone and WMZ, 1998.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.
Grassland												
5	10	0	0	10	0	0	10	0	0	10	0	0
Total	10	0	0	10	0	0	10	0	0	10	0	0
Farmland												
21	0	19	0	0	0	0	0	0	0	0	10	0
22	0	19	0	0	0	0	0	0	0	0	10	0
29	10	0	0	0	0	0	0	0	0	5	0	0
Total	10	38	0	0	0	0	0	0	0	5	19	0
Parkland												
31	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0
37	10	0	0	10	0	0	10	0	0	5	0	0
38	10	0	0	10	0	0	100	0	0	15	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0
43	20	0	51	10	0	51	50	0	51	60	0	25
44	0	0	0	0	0	0	0	0	0	0	0	0
45	20	0	0	10	0	0	20	0	0	55	0	0
46	0	0	0	0	0	0	0	0	0	0	0	0
47	10	0	0	0	0	0	0	0	0	10	0	0
Total	71	0	51	40	0	51	179	0	51	144	0	25
Forest Fringe												
48	20	0	0	20	0	0	259	0	0	40	0	0
49	81	0	0	80	0	0	617	0	0	233	0	0
50	101	0	101	90	0	51	349	0	51	119	0	76
51	10	0	0	10	0	0	30	0	0	10	0	0
52	10	0	0	10	0	0	10	0	0	5	0	0
53	10	0	0	10	0	0	30	0	0	10	0	0
54	10	0	0	0	0	0	0	0	0	10	0	0
55	30	19	0	20	19	0	40	19	0	20	10	0
Total	273	19	101	240	19	51	1,334	19	51	447	10	76

Appendix 3. Continued.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.
Forest												
56	121	0	0	90	0	0	368	0	0	159	0	0
57	71	0	0	60	0	0	329	0	0	99	0	0
58	61	0	0	50	0	0	289	0	0	70	0	0
59	141	0	0	130	0	0	448	0	0	159	0	0
60	50	0	0	50	0	0	119	0	0	55	0	0
61	20	0	0	20	0	0	80	0	0	15	0	0
62	151	0	0	130	0	0	667	0	0	228	0	0
63	222	0	0	220	0	0	1,593	0	0	442	0	0
64	101	0	0	90	0	0	249	0	0	104	0	0
65	172	0	0	160	0	0	1,275	0	0	293	0	0
66	202	0	0	190	0	0	787	0	0	263	0	0
67	192	0	0	170	0	0	587	0	0	273	0	0
68	30	0	0	20	0	0	30	0	0	25	0	0
69	111	19	0	110	19	0	578	57	0	144	10	0
70	71	19	0	70	0	0	478	0	0	109	19	0
71	40	19	0	30	19	0	119	383	0	35	58	0
72	61	0	0	60	0	0	309	0	0	70	0	0
73	61	0	0	50	0	0	100	0	0	104	0	0
Total	1,878	57	0	1,701	38	0	8,404	440	0	2,646	86	0
Northern Shield												
74	30	0	0	30	0	0	70	0	0	30	0	0
75	20	0	0	10	0	0	20	0	0	55	0	0
76	0	0	0	0	0	0	0	0	0	0	0	0
Total	50	0	0	40	0	0	90	0	0	84	0	0
Prov. Total	2,292	115	152	2,031	57	101	10,057	460	101	3,356	115	101

Appendix 4. Hungarian partridge hunting activity by ecozone and WMZ, 1998.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.
Grassland												
1	109	80	264	89	60	213	431	1,110	2,129	128	278	699
2	89	60	211	79	60	213	421	838	3,034	123	99	1,129
3	10	20	53	10	20	53	29	214	213	15	40	108
4	219	139	581	188	139	533	1,009	1,227	3,194	335	575	779
5	149	20	475	129	20	373	578	97	3,833	227	20	645
6	109	20	211	79	20	107	362	58	160	113	10	430
7	40	20	106	30	20	107	69	117	106	30	10	54
8	50	20	106	40	20	53	225	234	106	64	30	108
9	129	100	0	109	99	0	372	954	0	148	307	0
10	99	139	0	69	119	0	137	1,227	0	59	278	0
11	70	60	0	40	40	0	127	58	0	64	40	0
12	0	20	0	0	0	0	0	0	0	0	30	0
13	99	100	106	89	79	107	245	273	213	74	109	81
14	149	40	53	119	40	53	313	175	160	148	50	27
Total	1,321	836	2,164	1,070	735	1,811	4,320	6,584	13,148	1,533	1,874	4,058
Farmland												
15	338	20	264	277	0	160	921	0	1,011	562	20	430
16	60	80	53	20	40	0	49	58	0	54	69	27
17	50	80	106	30	20	53	59	39	106	49	99	108
18	149	60	211	119	40	213	686	117	692	251	60	296
19	288	119	1,108	208	60	1,065	989	292	5,962	380	238	2,311
20	169	0	53	99	0	53	392	0	106	173	0	54
21	248	20	264	129	0	213	774	0	1,278	389	10	296
22	119	20	158	69	0	107	313	0	160	133	10	108
23	109	20	53	79	20	53	245	78	106	99	10	54
24	199	60	422	149	60	373	921	448	2,342	187	139	484
25	139	20	0	139	20	0	500	97	0	133	60	0
26	50	40	0	40	0	0	147	0	0	44	129	0
27	60	0	53	50	0	53	147	0	160	49	0	27
28	60	0	0	40	0	0	157	0	0	74	0	0
29	298	60	211	248	40	160	1,195	136	266	419	40	161
30	189	0	0	129	0	0	372	0	0	187	0	0
Total	2,523	597	2,956	1,822	298	2,503	7,866	1,266	12,190	3,184	882	4,354

Appendix 4. Continued.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.
Parkland												
31	30	0	106	20	0	53	20	0	479	30	0	188
32	70	0	106	20	0	53	39	0	160	64	0	188
33	0	0	106	0	0	53	0	0	106	0	0	106
34	20	20	0	10	0	0	20	0	0	15	10	0
35	40	0	0	20	0	0	39	0	0	59	0	0
36	60	0	53	10	0	0	20	0	0	148	0	27
37	79	0	0	40	0	0	88	0	0	202	0	0
38	10	0	53	0	0	53	0	0	106	5	0	54
39	20	0	0	0	0	0	0	0	0	59	0	0
40	30	0	53	20	0	53	88	0	106	15	0	27
41	89	0	53	40	0	53	88	0	106	74	0	54
42	50	0	158	40	0	107	147	0	106	133	0	81
43	30	0	53	30	0	53	59	0	266	59	0	108
44	20	0	0	20	0	0	108	0	0	30	0	0
45	258	0	211	228	0	213	1,019	0	585	296	0	134
46	60	0	53	20	0	53	89	0	213	49	0	54
47	109	20	53	89	20	53	323	58	319	99	20	81
Total	973	40	1,056	584	20	799	2,126	58	2,565	1,336	30	1,102
Forest Fringe												
48	0	20	0	0	20	0	0	19	0	0	10	0
49	20	0	0	10	0	0	29	0	0	10	0	0
50	40	0	53	30	0	0	88	0	0	20	0	27
51	30	0	0	20	0	0	49	0	0	15	0	0
52	50	0	0	30	0	0	88	0	0	30	0	0
53	10	0	0	0	0	0	0	0	0	5	0	0
54	40	0	0	40	0	0	157	0	0	113	0	0
55	10	0	0	10	0	0	20	0	0	5	0	0
Total	199	20	53	139	20	0	431	19	0	197	10	27

Appendix 4. Continued.

Ecozone and WMZ	# Zone Hunters			# Successful Hunters			Harvest			Hunter-days		
	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.	Sask.	Cdn.	Non-res.
Forest												
56	10	0	53	0	0	53	0	0	319	5	0	108
57	20	0	0	10	0	0	59	0	0	20	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0
59	10	0	0	10	0	0	98	0	0	5	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0
61	0	0	0	0	0	0	0	0	0	0	0	0
62	10	0	0	10	0	0	69	0	0	10	0	0
63	20	0	0	10	0	0	20	0	0	15	0	0
64	10	0	0	0	0	0	0	0	0	20	0	0
65	10	0	0	0	0	0	0	0	0	10	0	0
66	10	0	0	10	0	0	29	0	0	10	0	0
67	0	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0	0
71	0	0	0	0	0	0	0	0	0	0	0	0
72	10	0	0	10	0	0	20	0	0	10	0	0
73	10	0	0	0	0	0	0	0	0	10	0	0
Total	119	0	53	59	0	53	294	0	319	113	0	108
Prov. Total	5,135	1,494	6,281	3,675	1,072	5,166	15,037	7,928	28,212	6,363	2,796	9,649

Appendix 5. Saskatchewan resident and non resident pheasant hunting activity by ecozone and WMZ, 1998.

Ecozone and WMZ	# Zone Hunters	# Successful Hunters	Harvest	Hunter-days
Grassland				
1	90	30	39	109
2	70	39	127	74
3	0	0	0	0
4	219	167	389	321
5	80	59	156	104
6	10	10	19	10
7	50	30	49	64
8	30	10	49	35
9	20	0	0	20
10	10	0	0	15
11	70	39	49	84
12	0	0	0	0
13	70	39	68	79
14	129	69	243	173
Total	846	492	1,187	1,085
Farmland				
15	657	453	1,479	1,149
16	40	10	19	35
17	0	0	0	0
18	20	10	10	10
19	0	0	0	0
20	10	10	10	5
21	0	0	0	0
22	0	0	0	0
23	10	10	39	10
24	10	10	29	20
25	10	10	19	5
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	10	10	29	10
30	0	0	0	0
Total	766	522	1,635	1,243

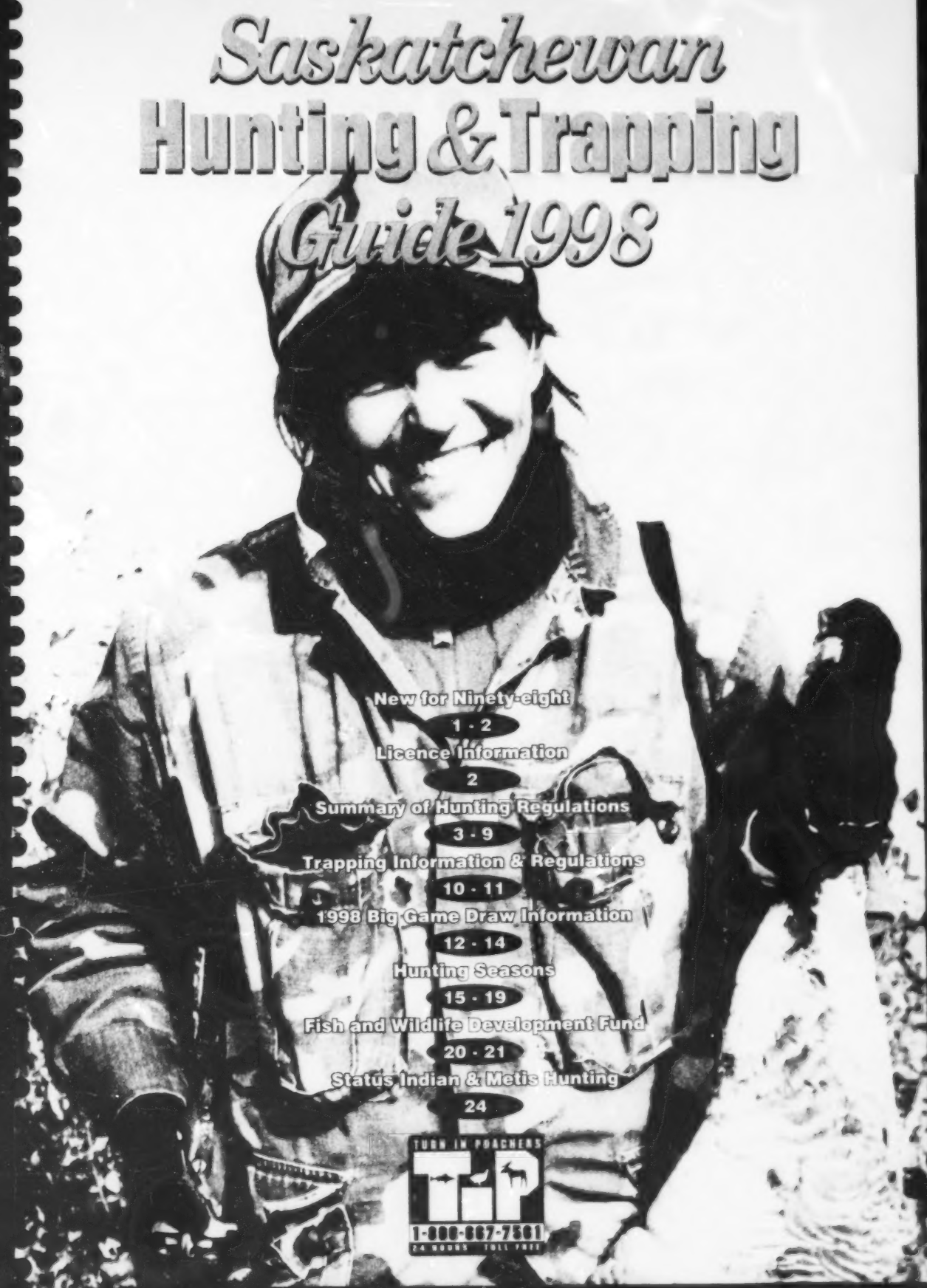
Appendix 5. Continued.

Ecozone and WMZ	# Zone Hunters	# Successful Hunters	Harvest	Hunter-days
Parkland				
31	50	30	29	39
32	20	20	68	25
33	0	0	0	0
34	10	0	0	10
35	0	0	0	0
36	0	0	0	0
37	0	0	0	0
38	0	0	0	0
39	0	0	0	0
40	0	0	0	0
41	0	0	0	0
42	0	0	0	0
43	0	0	0	0
44	0	0	0	0
45	10	10	29	5
46	0	0	0	0
47	0	0	0	0
Total	90	59	127	79
Forest Fringe				
48	0	0	0	0
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
52	0	0	0	0
53	0	0	0	0
54	0	0	0	0
55	0	0	0	0
Total	0	0	0	0
Forest				
58	10	10	10	10
66	10	10	97	10
73	10	10	19	64
Total	30	30	127	84
Provincial Total	1,731	1,102	3,075	2,490

General Appendix

General Appendix 1. Saskatchewan Hunting and Trapping Guide 1998.

Saskatchewan Hunting & Trapping Guide 1998



New for Ninety-eight 1 - 2

Licence Information 2

Summary of Hunting Regulations 3 - 9

Trapping Information & Regulations 10 - 11

1998 Big Game Draw Information 12 - 14

Hunting Seasons 15 - 19

Fish and Wildlife Development Fund 20 - 21

Status Indian & Metis Hunting 24

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New for

A message from the Minister

I am pleased to present the 1998 Saskatchewan Hunting and Trapping Guide. The guide provides information on hunting and trapping seasons, wildlife management zones, wildlife regulations and other important information to help you enjoy our great outdoors.

Management of our wildlife resources is led by Saskatchewan Environment and Resource Management, but receives strong support from a wide variety of interest groups. Wildlife organizations, Aboriginal organizations and other people with a stake in the wildlife resource, continue to dedicate time and effort to help protect and enhance this resource. We look forward to working closely with these and other interested groups and individuals across the province.

In the past few years, many farmers have experienced significant financial losses as a result of waterfowl and big game damage to agricultural crops. Thanks to the support of hunters, a Big Game Damage Compensation Fund was implemented in 1996 to assist landowners. I am happy to announce that the provincial and federal governments recognized the need and magnitude of wildlife damage and an upgraded Wildlife Damage Compensation Program is in place for 1998. This means that the $11.00 Big Game Damage Licence has been eliminated this year.

New regulations under The Wildlife Act were developed for the security of people, property and conservation purposes in Saskatchewan. A total ban on the use of artificial lights or night vision scopes is in place and it is illegal to shoot at night from roads, road allowance and ditches. These new regulations apply to all hunters and will help us achieve the public safety objectives of the Saskatchewan people.

We continue to count on your support in helping us manage our valuable wildlife resources.

Lorne Scott

Lorne Scott
Minister of Environment
and Resource Management

Cover photo courtesy of
"Becoming an Outdoor Woman"

ninety-eight

Following are a number of new items which, while proposed for implementation in 1998, are awaiting final regulatory approval and may be subject to change.

Antelope

Although the antelope population in general has stabilized, poor fawn survival continues to hamper population growth throughout the pronghorn antelope range in Saskatchewan. The 1997 survey results indicate low kid to doe ratios (26:100 does). Until reproduction improves and kid to doe ratios reach a minimum of 65:100 does, licenced hunting for antelope will remain closed in Saskatchewan.

Elk

Saskatchewan hunters can again look forward to some excellent elk hunting opportunities. Because of the potential to over harvest some of the forest elk herds, there will be a bulls only bag limit during the regular elk season. This means that the either-sex bag limit that was in place in 1997 during the second week of the regular elk season will switch to a bulls only bag limit in 1998 (refer to page 17 for details). Non-trophy draw elk seasons which enable controlled harvest (through quotas) on targeted elk herds will be retained for 1998. It is important that population growth be stabilized on forest fringe elk herds in order to minimize crop damage concerns. For 1998, draw non-trophy elk seasons will open near the end of November. A better chance for good snow conditions at this time of year, together with increased access to some pastures that were previously closed to hunting (ie. Hazel Dell pasture), should increase harvest success.

Some changes were made in both regular and draw elk seasons to standardize dress code requirements among archery, muzzleloader and rifle hunters. These changes will eliminate the confusion that previously existed when white-tailed deer archery and muzzleloader hunters and rifle elk hunters were afield at the same time.

Due to a higher than anticipated combined licenced and unlicenced harvest, the elk hunting season in WMZ 14 will be closed for 1998.

Additional archery and muzzleloader hunting opportunities will be available during the draw elk seasons in WMZ's 6 and 7. Hunters drawn for these zones are reminded to exercise good hunter ethics and respect the rancher's concerns that cattle are afield during these hunting seasons.

Moose

Extensive moose population surveys were conducted during February and March of 1998 to assess the status of the provincial moose herd and to form the basis for development of a comprehensive moose management strategy. Moose surveys (see page 25) were flown in the Divide and Porcupine Forests, Moose Mountain and Duck Mountain provincial parks and the Cumberland Delta. Although there were some exceptions, long term trends indicate declining moose populations.

Participation by all resource user groups in the development of the new moose management strategy will be crucial. The management strategy will focus on establishing moose population goals and implementing new allocation and harvest mechanisms to ensure sustainable moose management for future generations.

For 1998, draw quotas in northeast zones (48, 49 and 56 combined, 57, 58 and 59) will be cut back to reduce pressure on mature cows and reduce harvest of moose.

Over the past two years, the Cumberland Co-management Board has explored a number of options that would assist in recovery of the area's moose population. Options include habitat enhancement projects (controlled burns) and road corridor and area game preserves. The board's recommendations will be incorporated into the provincial moose management strategy.

White-tailed Deer and Mule Deer

The 1997 winter caused significant mortality on the grassland and portions of the parkland whitetail and mule deer herds. To enable herd growth, either-sex and non-trophy mule deer quotas have been dramatically reduced. To standardize season structure, the archery and muzzleloading mule deer seasons, for most zones, will close the same date as the archery and muzzleloading white-tailed deer seasons. Non-trophy mule deer seasons have been eliminated in all but three WMZs (11, 45 and 46).

Similarly, non-trophy white-tailed deer hunting opportunities have been reduced. The second non-trophy white-tailed deer bag limit has been eliminated in all zones except Prince Albert urban zone which is only open for archery hunting. However, because excellent reproduction is anticipated in 1998, a single non-trophy bag limit was retained in many areas to limit population increases and address concerns of landowners regarding potential for crop damage.

Waterfowl

Additional hunting opportunities will be available to goose and sandhill crane hunters this fall. The dark goose bag limit, which includes Canada and white-fronted geese, will be increased from six to eight birds daily; however only five of this eight bird daily bag may be white-fronted geese.

Some changes have also been made to direct additional harvest on white geese and in particular on snow geese. Canadian and non-resident hunting of white geese will open across the province on September 1, 1998 (the restrictions on morning only hunting remain in place, with the exception of the calender date change, refer to page 19 for details). As well, the possession limit for white geese has been increased from 20 to 30 birds.

Continued on next page ▶

continued from page 1

What's new for ninety-eight

The 1998 sandhill crane season, running September 1 to December 12, has been extended to coincide with the closing of the goose hunting season.

Elimination of Big Game Damage Fund Licence

The $11 Big Game Damage Fund Licence has been eliminated effective April 1, 1998. It is important to note that while this added licence fee did cause some hunter concerns, it was instrumental in the establishment of a long term big game damage compensation program. In recognizing the important contributions that farmers make in retaining wildlife habitat on their land, the provincial and federal governments have made a significant joint funding commitment to address wildlife damage to agricultural crops.

A one time cost-shared federal/provincial startup contribution of $27.8 million has been made to the wildlife damage compensation programs. In addition to this significant funding commitment, amendments, which were requested by farmers, have been made to the compensation program. These amendments, which apply mainly to the rate of coverage and to the size of the deductible on all claims, will provide more equitable treatment to farmers experiencing crop damage.

The department appreciates the support and financial sacrifices that hunters made to initiate the big game damage compensation program. Without this the program would not have been possible.

New Regulations to Eliminate Unsafe Night Hunting

In February 1998, the department in co-operation with many Aboriginal and non-Aboriginal interest groups, introduced new regulations under *The Wildlife Act* which will end unsafe night hunting. Under the new regulations, there is a provincial ban on the use of any artificial light including spotlights, jacklights, vehicle headlights and night vision scopes for the purposes of hunting any wildlife. As well, there is a provincial ban on the discharge of firearms at night from any prepared surface road, road allowance or ditch. Aboriginal hunters exercising their traditional hunting practices may continue to hunt at night under natural light conditions on all lands to which they have a right of access.

Licence Fees

Fees include GST (Goods and Services Tax) except fur licences.

Note: A Saskatchewan Wildlife Habitat Certificate must be purchased to validate a game bird, big game or fur licence. Your hunting licence and habitat certificate must be carried with you at all times while hunting.

Saskatchewan Wildlife Habitat Certificate	$11

Game Birds:

A Federal Migratory Game Bird Permit, a Saskatchewan Game Bird Licence and a Wildlife Habitat Certificate are required to hunt waterfowl.

Migratory Game Bird Permit (available at any post office)	$17.84
Saskatchewan Resident Game Bird Licence	$11
Canadian Resident Game Bird Licence	$58
Non-resident Game Bird Licence	$116

Youth Package (Residents only):

Persons 12 to 15 years of age, who have passed a Firearm Safety/Hunter Education course, may purchase a Youth Game Licence Package that includes a Wildlife Habitat Certificate, an either-sex white-tailed deer licence and a game bird licence. A free youth fur licence is also available. First-time trappers must take a trapper education course or pass an equivalency exam before they can obtain the fur licence.

Youth Game Licence Package	$20
Big Game Draw (Saskatchewan Residents Only):	
Elk	$55
Moose	$55
Mule Deer	$38
Mule Deer, Non-trophy	$20
White-tailed Deer:	
Saskatchewan Resident	$33
Canadian Resident	$140
Non-trophy	$20
Non-resident, Guided *(First and second licences, **where applicable**, are the same fee.)*	$280
Elk:	
Saskatchewan Resident	$33
Moose:	
Saskatchewan Resident	$33
Saskatchewan Resident, Guided	$165
Canadian Resident, Guided	$165
Non-resident, Guided	$330
Mule Deer Archery:	
Saskatchewan Resident	$38
Barren-ground Caribou:	
Residents of WMZ 76 only	$22
Black Bear:	
Saskatchewan Resident	$17
Canadian Resident	$55
Non-resident, Guided	$110
Fur Licences (Saskatchewan Residents Only):	
South Saskatchewan Fur Licence	$30
Fur Conservation Area Fur Licence	$10
Saskatchewan Resident Youth Fur Licence	Free
Saskatchewan Treaty Indian Fur Licence	Free
Fur Dealer Licences:	
Resident Fur Dealer	$50
Each agent (maximum of three)	$50
Non-resident Fur Dealer	$350

Visit our Web Site *www.gov.sk.ca/govt/environ/*

Both the official Saskatchewan Hunting and Trapping Guide and the Saskatchewan Anglers' Guide are now available on the SERM web site. In addition, hunters and anglers may access the licence order form.

Summary of Hunting Regulations

Definitions

Saskatchewan residents are Canadian residents who:

- have their **principal residence** in Saskatchewan **and** must have been living in the province for three months immediately preceding the date of the purchase or application for a licence; or
- are members of a regular force of the Canadian Armed Forces or the Royal Canadian Mounted Police, and are stationed and residing in the province.

Canadian residents are people who:

- have their principal residence in Canada and are Canadian citizens; or
- have resided in Canada for 12 months immediately preceding their application for a licence.

Non-residents are people other than Canadian residents.

This is a selection of important regulations, not an official document. Complete information is contained in *The Wildlife Act and Regulations*. The Act, along with formal hunting and trapping regulations, may be obtained by writing:

Queen's Printer,
1871 Smith Street,
Regina, SK,
S4P 3V7
(306) 787-6894

Did You Know . . .

- All Saskatchewan residents must provide their Health Services Card number when buying game licences. Members of the Canadian Armed Forces and RCMP officers can use their regimental numbers when buying resident licences.
- Saskatchewan residents may buy a game licence and migratory game bird permit for a visiting hunter before the person's arrival if they can supply the hunter's name, date of birth and address and vouch for the person's previous hunting experience. Both the buyer and licence holder must sign the hunting licence to make it valid.
- **People under 18 years of age and all first-time hunters and trappers** must graduate from a Firearm Safety/Hunter Education course to buy or apply for Saskatchewan game or fur licences. Canadian and non-resident hunters must also abide by these rules. First-time trappers must also take a humane trapper education course or pass an equivalency test available from SERM offices.
- Non-residents wishing to hunt white-tailed deer, bear or moose must use the services of a registered outfitter or guide. Non-residents who wish to hunt game birds are not required to use the services of a guide. For a list of outfitters offering guided hunts, contact:

  Saskatchewan Outfitters Association
  P.O. Box 2016, Prince Albert,
  SK, S6V 6K1
  phone: (306) 763-5434
  fax: (306) 922-6044.
- Hunters who shoot a big game animal (except bear) which is unfit for human consumption because of parasites, disease or a previous wound can obtain another licence free, provided that the animal is examined by a conservation officer and deemed to be unfit for consumption.
- Hunters who lose their Saskatchewan Wildlife Habitat Certificate, fur or game licence may buy duplicates for $5.50 each from any SERM office.

Federal Gun Control Regulations and Youth Hunting Regulations

With the passage of *The Firearms Act* (Bill C-68) in December 1995, further restrictions on possessing and/or acquiring firearms will soon be in place. At the time of this publication, information from Justice Canada stated firearms owner licensing and firearms registration provisions are expected to be implemented in October, 1998. As these new federal firearms regulations will replace previous laws, hunters of all ages may be affected.

PLEASE NOTE: Saskatchewan Wildlife Regulations allow that youths 12 to 15 years of age may purchase a game licence, after graduating from a Firearm Safety/Hunter Education course, by having their parent or guardian complete the consent portion of the Saskatchewan Wildlife Habitat Certificate. While hunting, the youth must be under direct supervision of an adult who is at least 18 years of age.

The new federal firearms legislation may present additional requirements for hunters.

For information on the new federal firearms regulations, please contact your local police detachment or the

Chief Provincial Firearms Officer, phone (306) 787-5560, or write:

Saskatchewan Justice,
1874 Scarth Street,
Regina, SK, S4P 3V7.

Baiting Regulations

Regulations state:

- no person for the purpose of hunting big game, shall place bait in a provincial forest, on any unoccupied Crown land or on any land within a provincial park or recreation site without:
  - (a) erecting at the site a sign of durable material of not less than 600 square centimetres (8 x 12 inches) on which is clearly marked the person's full name and address; or
  - (b) clearly mark his/her full name and address on any container used for holding the bait.
- no person shall place bait on any Wildlife Development Fund Lands.
- **no person shall place bait on any land within a provincial park unless authorized by the park manager.**
- no person shall place bait for the purpose of hunting big game within:
  - (a) 500 metres of any campground, dwelling or other place used by persons;
  - (b) 200 metres of any numbered highway, primary grid road or grid road; or
  - (c) 200 metres of any maintained forest access road, snowmobile trail or cross-country ski trail prior to April 1, in any year.
- no person shall place bait for the purpose of hunting bear unless that bait is placed in a container that:
  - (a) does not have a volume exceeding 210 litres; (45 gallon drum);
  - (b) is constructed in a manner to prevent the bear from becoming trapped; and
  - (c) cannot be removed by a bear.
- no person shall place bait, for the purpose of hunting big game other than bear, that:
  - (a) exceeds 40 litres in volume (10 gallons); or
  - (b) in the case of hay bales, consists of more than two bales with a combined total weight exceeding 90 kilograms (198 pounds).
- no person shall store any bait at or near any bait location.
- no person shall hunt at a bait site placed out by another person without the person's consent.
- no person other than the owner shall tear down, remove, damage, deface or cover up any bait or sign.

Notice of Hunter Inspections

Enforcement officers will be checking for compliance with hunting regulations at checkpoints, border crossings and in hunting areas throughout the province during hunting seasons. People found guilty of committing a hunting or trapping violation may lose their hunting privileges for at least one year following the date of conviction or voluntary fine payment.

- no person shall place bait for hunting big game prior to August 1, except bait for hunting bear during the spring bear season on or after March 1.
- a person who has placed bait for the purpose of hunting big game shall remove, at the end of the hunting season for which it was placed, any remaining bait, the container and the sign marking the bait.
- bait means any food intended to attract big game and includes cereal grain, forage or hay; manufactured or processed feed; vegetables, fruit or salt; or carcass, viscera or other parts of domestic livestock or fur animals; but does not include fields of crop or forage, whether standing or harvested; crops, forage or hay stacked in the field where it is grown; or grain that is scattered or piled solely as a result of farming operations.

Safety Regulations

It is a violation to:

- discharge a firearm at night from roads, road allowances and ditches.
- to use any artificial light, night vision scopes, or goggles for the purpose of hunting
- carry a loaded firearm in or on a vehicle, or while on horseback. A firearm with shells in the magazine, or shells in a clip attached to a hinge plate or in contact with the firearm is considered loaded. A percussion type muzzleloader is loaded when a cap is placed on the nipple. A flintlock rifle is loaded when gunpowder is placed on the flash pan.
- shoot across or along a provincial highway, primary grid road or grid road as indicated on Saskatchewan's grid road map.
- handle or discharge a firearm without reasonable consideration for persons or property.
- hunt or trap within 500 metres of a building, stockade or corral occupied by people or livestock, without consent from the owner or occupant in charge.
- hunt big game in a designated rifle season, or accompany a hunter, without wearing a complete outer suit of scarlet, bright yellow, blaze orange or white, or any combination of these colors. You must wear head gear of any of these colors except white.

  Note: Hunters using bows or muzzleloaders during specified archery and/or muzzleloader seasons are not required to observe the dress code. However, hunters using bows or muzzleloaders during a rifle season where there is no overlapping archery or muzzleloader season for the species being hunted must observe the same dress code as rifle hunters.
- hunt while intoxicated or under the influence of narcotics or alcohol.
- hunt wildlife from one half hour after sunset to one half hour before sunrise.
- hunt furbearing animals, except by means of a trap, from one half hour after sunset to one half hour before sunrise.

Campfire Common Sense

Last year, 91 forest fires were caused by recreational campfires in the province. To ensure you're not the cause of forest fires:

- **remove surface material down to mineral soil or build your fire on rock.**
- **have a shovel and pail of water on hand.**
- **always keep your fire in sight.**
- **douse with plenty of water and stir with a stick to ensure the fire is out.**
- **check the coals with your bare hand to make sure it's cool to your touch.**

To report a forest wildfire, call a conservation officer or

Firewatch (toll free) 1-800-667-9660

Conservation Regulations

For legal purposes, the word hunting includes taking, wounding, killing, chasing, pursuing, worrying, capturing, following after or on the trail of, searching for, shooting at, trapping, setting snares for, stalking or lying in wait for any wildlife, whether or not the wildlife is subsequently captured, wounded or killed.

Posted land means any land, including leased Crown land, where there are legible signs prominently placed along the boundaries to provide reasonable notice to hunters, bearing the words "No Trespassing," "No Hunting," "No Shooting," or words or symbols similar to that effect. It also includes lands where there are signs placed to provide reasonable notice or instructions concerning the method of hunting or the use of vehicles connected with hunting.

Regardless of how land is posted (i.e. no hunting or no shooting), any person may hunt on that land provided they have permission from the landowner or lessee.

It is a violation to:

- use a vehicle or power boat to chase any wildlife.
- hold a regular and a draw licence for the same species.
- use an aircraft for any purpose connected with searching for, hunting or killing game, except as a means of transportation to a hunting camp or hunting area, by using the most direct route available, flying at normal altitudes.
- hunt wildlife on Sunday during an open big game or game bird season in any WMZ.
- aid or assist Indians or Métis while they are hunting for food in accordance with their Aboriginal rights, unless you are also an Indian or Métis or if you are a non-Indian member of the immediate family (hunting permit is required).
- waste, destroy, spoil or abandon the edible flesh of a game bird or big game animal, except for bear.
- injure or kill a game animal or bird without making every reasonable attempt to retrieve it.

  Note: People on the trail of wounded game must receive landowner permission before entering posted land. If retrieving a wounded animal after legal hunting hours, or on Sunday, contact the local conservation officer before continuing the search.
- carry or transport a firearm through a game preserve, wildlife refuge, wildlife management unit, regional park, provincial park, protected area or recreation site that is closed to hunting unless the firearm is encased. **Specific restrictions apply to Migratory Bird Sanctuaries - please consult the Special Lands Provisions (page 8).**
- use or carry another person's licence, seal or certificate while hunting.
- hunt game birds within 500 metres of a wildlife feeding station, or enter any lands posted with lure crop signs contrary to posted instructions.
- hunt game birds with a shotgun unless the magazine is plugged in such a way that it cannot hold more than two shells.
- hunt migratory game birds with a rifle or more than one shotgun.
- hunt upland game birds with a rifle other than a .22 rimfire.
- shoot any wild bird except game birds in season, other than crows, magpies, cowbirds, blackbirds, starlings, grackles, English sparrows or common pigeons.
- transport any game (including pheasants) not accompanied by evidence of its sex and age, except when all ages and both sexes of game may be legally hunted.
- hunt big game with a firearm or metal projectile of .23 calibre or less.
- hunt big game, including bear, with metal-jacketed, hardpoint, non-expanding bullets.
- hunt big game with a bow with a draw weight of less than 18.2 kilograms (40 pounds) and arrowheads of less than 2.2 centimetres (7/8 inches) in diameter, or crossbow with a draw weight of less than 68 kilograms (150 pounds) and arrowheads of less than 2.2 centimetres (7/8 inch) in diameter.
  (for big game hunting purposes, crossbows may only be used in any open muzzleloader or rifle season).
- willfully cause damage to crops, livestock or property.
- dig a pit or excavation, or leave it open without the consent of the owner or occupant of the land.
- hunt from a windmill without landowner consent.

Conservation Easement Legislation is a Reality

This new legislation enables landowners to donate a conservation easement on important natural or archaeological areas for a designated term or for perpetuity. Perpetuity conservation easements will be a valuable tool for preserving an environmental legacy for future generations.

The Federal Income Tax Act now considers conservation easement donations as charitable gifts, with taxation benefits to landowners under certain circumstances.

Interested landowners may contact Fish and Wildlife Branch in Regina at 306-787-1144 for additional information.

Wildlife Advisory Committee

The Minister of Environment and Resource Management has established the Wildlife Advisory Committee to review and recommend season dates and bag limits for game and fur species as well as to provide feedback on wildlife programs. The committee includes representatives from the following groups:

- Saskatchewan Association of Rural Municipalities
- Saskatchewan Outfitters Association
- Saskatchewan Trappers Association
- South Saskatchewan Wildlife Association
- Saskatchewan Stock Growers Association
- Nature Saskatchewan
- Saskatchewan Wildlife Federation
- Saskatchewan Bowhunters Association
- Saskatchewan Blackpowder Association
- Federation of Saskatchewan Indian Nations

If you have any comments on wildlife programs or seasons, contact SERM or a Wildlife Advisory Committee representative.

Vehicle Controls

Like other conservation laws, vehicle controls allow more equal hunting opportunity and regulate the harvest of game. Depending on terrain and the type of vehicles involved, different controls are required.

Roads and Trails Only

A **Road** means a prepared surface designed for vehicular traffic.

A **Trail** means a route regularly travelled by vehicles.

During an open big game season in **WMZs 15 to 17 and 30 to 34,** no person hunting big game is allowed to drive off roads or road allowances with trails without written permission from the landowner, except to retrieve legally-killed game animals by the most direct route. In Moose Mountain Provincial Park, the use of vehicles is restricted to designated park roads and trails.

In **Regina/Moose Jaw and Saskatoon WMZ's**, no person hunting big game is allowed to drive off roads or road allowances with trails, except to retrieve legally-killed game animals by the most direct route.

Community pastures not named in the guide may have independent regulations governing vehicles, roads and trails. Consult the local pasture manager for details.

Designated Trails

Designated trails are a means of controlling vehicle access to game populations. From August 23 to December 6 in **WMZs 60 and 61**, and from August 30 to December 13, 1998 in **Cypress Hills (West Block) Provincial Park**, no person for any purpose related to hunting shall:

- drive a vehicle off a designated trail or provincial highway, **except** to retrieve a legally-killed big game animal and return by the most direct route. Firearms in vehicles driven off designated trails and provincial highways for this purpose must be encased.
- in WMZs 60 and 61 use a vehicle to erect or drive to a hunting camp more than 100 metres from a designated trail or provincial highway. Access to hunting camps must be by the most direct route.

  Exception: The designated trails regulation does not apply in that portion of WMZ 60, south of Township 52.
- in Cypress Hills (West Block) Provincial Park, park more than 10 metres from a designated trail.

Designated trails are in place in portions of the Manitou Sandhills area, Zone 46.

Designated trails in WMZs 60 and 61 will be marked at the start, at intersections with other designated trails, and at intervals with diamond-shaped orange markers.

Designated trails in Cypress Hills (West Block) Provincial Park are marked at the start and end with designated trail signs.

Designated trail maps for areas listed are available free at SERM offices and big game checking stations and from SERM, Fish and Wildlife Branch, 3211 Albert Street, Regina, SK, S4S 5W6.

Vehicles are restricted to designated trails within the Cypress Hills (West Block) and Saskatchewan Landing provincial parks; Brokenshell No. 1 and No. 2 and Elbow Wildlife Management Units; and Dundurn, Montrose, Park, Aberdeen and Rudy-Rosedale PFRA pastures.

All-terrain Vehicles (ATVs)

Within WMZs 1 to 47, 51, 52 and 54, excluding Cypress Hills (West Block) Provincial Park, no person shall carry a firearm (including a bow) on an all-terrain vehicle during an open big game season. "All-terrain vehicle" means any self-propelled vehicle designed for off-highway travel and includes any trailer, toboggan or other accessory.

Note: A four wheel drive passenger vehicle, including a 1/2 or 3/4 ton truck, is not considered an ATV provided the vehicle has not been altered so that the lowest portion of the bumper extends no more than 75 centimetres (30 inches) off of the road.

ATVs may be used to retrieve legally-killed game animals provided no firearms are carried on the vehicle.

Within WMZs 48 to 50, 53 and 55 to 76 and in Cypress Hills (West Block) Provincial Park during an open season for big game, no person shall carry a firearm on an ATV unless it is encased.

Exception: Encased firearms can be carried on ATVs in Duck Mountain Provincial Park and the Fort a la Corne Wildlife Management Unit during the 1998 spring bear season only. "Encased" means completely enclosed in a fastened gun case or wrapped in fabric, plastic or similar material so as not to be readily available for use.

In WMZs 48, 49, 56 to 59 and 68 during big game seasons, ATVs may only be operated between noon and midnight for purposes related to hunting.

Exceptions: Prior to October 18, 1998 an ATV may be used at any time in these WMZs to retrieve legally taken big game. In WMZ 59, north of Highway #55, ATVs may be used in the morning but only by the most direct route to access the designated trails in WMZ 60. Prior to October 18, 1998 ATV use in Greenwater Lake Provincial Park is restricted to retrieval of legally taken big game or for hauling baits (by permit only).

ATVs may not be used on any National Wildlife Area or Migratory Bird Sanctuary in the province.

Transporting Big Game

- Hunters transporting big game animals during a non-trophy season are required to keep evidence of species and sex. An easy method is to keep the head attached to the carcass. During the regular moose season, antlers must accompany a bull moose and the lower jaw must be kept to identify calves. If you intend to leave your hide at a Saskatchewan Wildlife Federation hide depot, remember to keep evidence of the sex and species for the trip home.
- Hunters who divide their meat and transport it to separate locations must obtain a game transportation permit, available free at SERM offices.
- Legally-tagged big game may be taken out of the province as long as the licence holder travels with the game.
- Any wildlife or wildlife parts not accompanying the licensed hunter, or wildlife not taken under authority of a hunting licence, require a wildlife export permit. Legally-tagged big game hides excluding antlers, claws or the skull, may be exported without the hunter accompanying the hide.
- A Convention on the International Trade in Endangered Species (CITES) permit is required to export all bear parts including the hide. Contact a conservation officer for details.
- Packages for shipping wildlife within or outside the province must be marked with the sender's name, address, hunting licence number and contents.

Shotgun-Archery-Muzzleloader Areas

During a big game season in Regina-Moose Jaw and Saskatoon WMZs, no person shall hunt wildlife with a rifle other than a muzzleloader.

Exception: Licensed trappers may carry and use a .22 calibre rimfire rifle or less in these areas during a big game season, provided they are performing "normal trapping operations."

Unless hunters are travelling on a numbered provincial highway or numbered grid road, all rifles carried within these zones must be broken down and encased, or placed in the trunk of a vehicle.

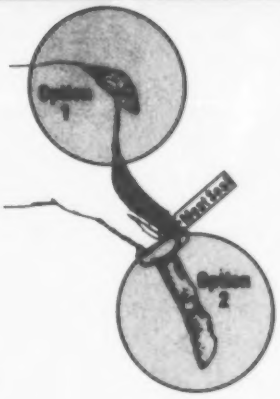
Big Game Tagging Requirements

Saskatchewan big game licences include both "meat" and "hide" seals to identify your kill. These seals must be separated, the date notched and secured to the animal immediately upon bagging it. If you do not separate the carcass from the hide, you must still attach both the meat and hide seals.

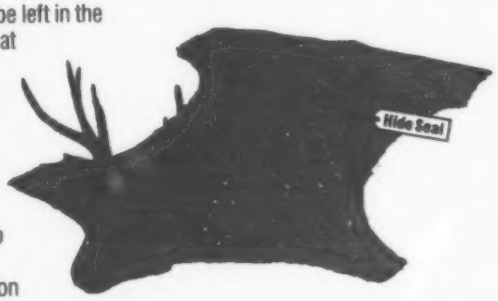
A draw licence is void when the seals are detached from the licence. Other licences are void if the hide and meat seal are separated.

It is best to secure your meat seal to a tendon of the hind leg or through the rib cage. Affix the hide seal to any part of the animal's skin. Do not attach the hide seals to antlers, horns or ears.

Carcasses transported separately from hides must have either the tail or one lower hind leg from the hock joint down attached with the hide still in place.



Moose and elk hides in WMZs 56 to 76 only, may be left in the field. The hide tag must remain affixed to the hide at the kill site. Hunters must still provide proof of animal sex and age with the antlers or lower jaw of the animal.



Carcasses must be properly tagged when delivered to the butcher for cooling, cutting and packaging. Provided hides are properly tagged and the species identification parts are attached to the carcass, the hides can be kept, sold to hide dealers or left at a Saskatchewan Wildlife Federation hide depot.

SWF Hide Collection Program

Last year thousands of big game hides were donated to the Saskatchewan Wildlife Federation's (SWF) Habitat Trust Fund, resulting in the securement of over 728 hectares (1,800 acres, $60,000) of critical wildlife habitat in Saskatchewan. Your donations of deer, moose and elk hides make a tremendous difference to the future of our wildlife resource.

Hunters wishing to make a donation may contact any one of the 134 SWF branches during the big game hunting season. Each hide donor will have the opportunity to win one of six rifles which are drawn annually at the SWF convention.

Game Bird Transport Regulations

Migratory game birds (ducks, geese, coots, snipe and sandhill cranes) are under the jurisdiction of the federal government through *The Migratory Birds Convention Act*. Upland game birds (grouse, partridge, ptarmigan and pheasant) are managed by the provincial government. The following are regulations for transporting and shipping game birds.

- Your game bird licence is also a permit to export legal limits of game birds, providing you accompany them in transit.
- To ship any **migratory game bird** across the Canadian border, you must ensure that the container is clearly marked with your name, address, migratory bird permit number and the exact contents of the package. If the migratory birds you have taken accompany you in a private vehicle, packaging and labelling are not required. **Individuals planning to ship or transport game birds into the United States (US), should consult U.S. Customs beforehand to ensure compliance with current regulations.**
- **Crane Hunters:** Sandhill cranes are included in the Convention on International Trade in Endangered Species (CITES). A CITES export permit is required before shipping or taking cranes across the Canadian border.
- CITES permits are available from Saskatchewan Environment and Resource Management (SERM) offices in areas where cranes are commonly hunted and at office locations close to the U.S. border including Estevan, Weyburn, Regina, Swift Current and Cypress Hills Provincial Park.
- Federal regulations say that no person can possess or transport a migratory game bird unless at least one feathered wing remains attached to the bird. The wing and plumage may be removed when the bird is going to be cooked right away, or after the bird is stored at the owner's residence.
- Packages containing **upland game birds** do not require labels if they accompany you in transit. If you ship them, upland game bird containers must be marked with your name and address, your Saskatchewan Game Bird Licence number and a statement of the contents.
- When transporting pheasants, evidence of sex must accompany the bird. If the bird is plucked and dressed in the field, leave the head attached to the carcass.
- Any wildlife or parts of wildlife **not** accompanying the hunter, or wildlife **not** taken under the authority of a hunting licence, require a wildlife export permit to be taken out of the province. Permits are available free at SERM offices.
- If you find a bird band, send it to your local conservation officer or to SERM, Fish and Wildlife Branch, 3211 Albert Street, Regina, SK, S4S 5W6. Include your name and address, when and where you found it (kilometres from the nearest town) and how you found it (on a bird you shot, bird found dead, etc.). You will receive a certificate detailing when and where the bird was banded.

Prairie Care Lands

Under the North American Waterfowl Management Plan (NAWMP), Ducks Unlimited Canada has been purchasing land with the intention of improving duck nesting habitat. These lands are planted to a mix of grasses referred to as Dense Nesting Cover (DNC). Since vehicular traffic of any kind (vehicles, snowmobiles, etc.) make trails that degrade the quality of the cover, access is permitted on foot only, at your own risk.

Special Lands Provisions

Wildlife Lands

Wildlife lands bought through the Fish and Wildlife Development Fund to conserve wildlife habitat are open to public hunting. Vehicle use is not permitted except to retrieve legally-killed big game animals. Baiting is not allowed on these lands.

Game Preserves, Wildlife Refuges and Federal Migratory Bird Sanctuaries

Hunting is not allowed within any of these areas. These areas are shown on the Wildlife Management Zone (WMZ) map (see centrefold).

Ecological Reserves

Ecological reserves are one of several types of protected areas in Saskatchewan, such as wildlife refuges or game preserves, where hunting is prohibited.

Ecological reserve status provides a high level of protection for a natural area by ensuring careful ecosystem management and limiting human use. To protect the integrity of the natural features of ecological reserves, the department can only allow low impact activities on these sites such as nature appreciation and research. This means that anyone visiting an ecological reserve must not disturb, destroy or remove plants, animals or other material. As of 1994, three ecological reserves have been established in the province. They are the Assiniboine slopes near Togo, Qu'Appelle Couiee near Wolseley and Buffalograss near Estevan.

National Wildlife Areas

There are six National Wildlife Areas open to hunting in the province. These are Last Mountain Lake, Stalwart, Webb, Prairie, Bradwell and Tway. Certain conditions apply to hunting in these areas. For information on the location of these areas or on specific hunting conditions in a National Wildlife Area, please contact Canadian Wildlife Service (CWS) headquarters at Last Mountain Lake, telephone at (306) 836-2022.

In the Last Mountain Lake National Wildlife Area, hunting season dates may be restricted to encourage waterfowl use of lure crops within the wildlife area and prevent damage to surrounding field crops. Vehicles may not be driven off roads or on trails identified for vehicle travel. The federal Bird Sanctuary and some lands around the national Wildlife Area Headquarters are closed to hunting. Hunters are urged to check the Information Kiosk at the headquarters for any special restrictions that may periodically be in effect within this area.

National Parks

Hunting is not permitted within Prince Albert National Park or on lands acquired for the Grasslands National Park. The boundaries of lands acquired to date for the Grasslands National Park are posted with black and yellow signs including a "No Hunting" symbol. Hunters are cautioned to watch for these posted lands in WMZ 2 along the Frenchman River Valley east of Val Marie. For more information on these lands, hunters may contact the park office in Val Marie at (306) 298-2257.

Parks and Wildlife Management Units

All wildlife management units, provincial parks, regional parks and recreation sites are closed to hunting and shooting unless otherwise specified. Unless you have a hunting licence valid in a particular management unit, park or recreation site, any firearms brought into them must be encased.

Forest Operations

To ensure the safety of hunters and all forest users, please adhere to the "Forestry Operations No Hunting" signs.

Road Corridor Game Preserves

Road corridor game preserves prohibit all hunting within 400 metres (1,312 feet) of selected roads in the Provincial Forest and are important for moose conservation. While travelling through road corridor game preserves, firearms must be encased and kept inside vehicles. Licensed hunters in road corridor game preserves may carry unloaded firearms from a vehicle to the edge of the game preserve by the most direct route available and return in the same manner.

Community Hunting

Excluding any privately owned land, only residents of the following communities may hunt big game within a 16 kilometre (10 mile) radius of their community: Beauval, Black Lake, Buffalo Narrows, Camsell Portage, Cree Lake, Deschambault, Dillon, Fond du Lac, Ile a la Crosse, Kinoosao, La Loche, La Ronge, Patuanak, Pelican Narrows, Pinehouse, Primeau Lake, Sandy Bay, Southend, Stanley Mission, Stony Rapids, Turnor Lake and Wollaston.

Indian Reserves

Indian reserves are closed to non-Indian hunters unless permission is granted by the Chief or Band council.

Community Pastures

PFRA and provincial community pastures are open to hunters only after the cattle have been removed, unless otherwise posted or listed in this guide. Deer hunting with bows and muzzleloaders will be allowed, with permission from pasture managers, in portions of Battle River-Cutknife, Brokenshell No. 1 and No. 2 (archery only), Coteau, Montrose, Rudy Rosedale, Usborne, Elbow (written permission only) and Wolverine community pastures. Montrose and Aberdeen pastures will open Nov. 2, 1998 for hunting.

Only one trail will be open within the Cookson and Park pastures, and hunters must comply with posted instructions.

Vehicles may not be driven off roads and trails within community pastures, except to retrieve legally-killed big game animals. Some areas within each pasture will remain closed at all times to protect buildings and resident livestock.

Maps and Photographs

Topographic maps and aerial photographs can be purchased for all areas of the province from: Saskatchewan Environment and Resource Management (SERM) district offices (except Regina office), and from Sask Geomatics, 2151 Scarth Street, Regina, SK, S4P 3V7, (306) 787-2799.

Forest Classification Maps are available for the forested portion of the province including Cypress Hills and Moose Mountain provincial parks. They are available from SERM, Forest Ecosystem Branch, Inventory Section, Box 3003, Prince Albert, SK, S6V 6G1.

Rural Municipal Maps are available at rural municipality offices. These maps identify who owns or leases local land.

Information on WMZ boundaries is available through local SERM field offices.

Signs for Better Hunting

About 85 per cent of the land in southern Saskatchewan is privately owned or controlled. Continued access to this land depends on the actions of hunters. Signs which control vehicle use on private or leased land must be respected.

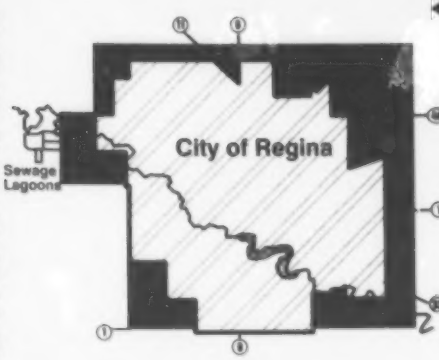
Signs which read "Hunting on Foot Only" or "Vehicles Restricted to Roads and Trails" are issued free to landowners and lease holders from SERM offices. Hunters failing to observe these vehicle control signs could face Wildlife Act charges.

To assist landowners, signs notifying hunters to "Please Close the Gate" and "Occupied Buildings are within 500 Metres" are also available from SERM offices.

Dundurn Military Reserve

Unscheduled live firing exercises may be conducted at the Dundurn Military Reserve during hunting seasons. When live firing exercises are in progress, the base is closed to non-military personnel. White-tailed deer and mule deer hunters should phone SERM in Saskatoon (306) 933-6240 to determine whether the military reserve is open or closed to hunting.

Goose Restriction Areas

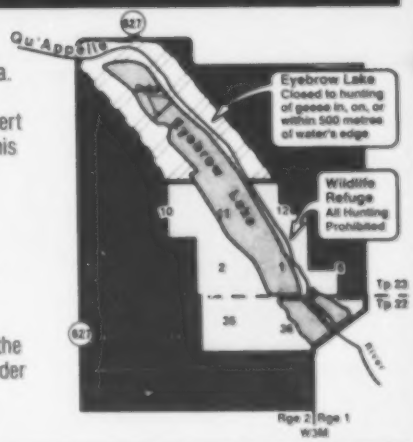


◄ Wascana Flock

Canada Geese may not be hunted in this area. For a detailed map of this area, contact a conservation officer at Room 140, 3211 Albert Street, Regina, Saskatchewan, S4S 5W6. This map is for reference only. Hunters should contact the Regina field office for details.

① WMZ 23 Eyebrow Lake Flock ▶

To protect the Canada goose population on Eyebrow Lake, lands around the lake are posted to prohibit hunting. All hunting is prohibited in the Nisku Wildlife Refuge, and the goose hunting restriction around the remainder of the lake is 500 metres from the water's edge.



Game Bird Hunting Closed

The following areas are closed to hunting:

Cypress Lake and the islands thereon, 16 km north of Consul; Tobin Lake and the islands thereon; Witchekan Lake (north of Spiritwood); the islands in the North Saskatchewan River between the Paynton Ferry and the Alberta border.

The following water areas are closed to game bird hunting in, on, or within 500 metres of the water's edge between September 14 and November 7, 1998, both dates inclusive:

Boulder Lake, 16 km southeast of Watrous
Ibsen Lake, 6.4 km west of Yellow Grass

The following water areas are closed to game bird hunting in, on, or within 500 metres of the water's edge between September 21 and November 7, 1998, both dates inclusive:

Barber Lake, 4.8 km north of Wiseton
Castlewood Lake, 4.8 km north of Biggar
Cactus Lake, 19.3 km southeast of Macklin
Cutbank Lake, 4.8 km northwest of Glidden

The following water areas are closed to game bird hunting in, on, or within 500 metres of the water's edge until November 9, 1998:

Antelope Lake, 12.8 km north of Gull Lake
Avonlea Reservoir, 4.8 km southeast of Avonlea
Bigstick Lake, 16 km east of Golden Prairie
Birch Lake, 16 km northeast of Glaslyn
Buffalo Coulee Lake, 12.8 km northwest of Coleville
Cabri Lake, 16 km south of Mantario
Deep Lake, 8 km south of Indian Head
Dewar Lake, near the town of Dewar Lake
Ear Lake, 9.6 km east of Reward
Eyre Lake, 11.2 km west of Mantario
Flat Lake, 4.8 km southeast of Wilkie
Goose Lake, 11.2 km east of Harris
Gooseberry Lake, 20.9 km northeast of Fillmore
Grassy Lake, 11.2 km northeast of Luseland
Highfield Reservoir, 28.9 km east of Swift Current
Junction Dam, 3.2 km north of Maple Creek
Kiyiu Lake, 9.6 km north of Netherhill
Lac La Course, 9.6 km southeast of Pelly
Leech Lake, 12.8 km south of Yorkton
Lomond Lake, 4.8 km northwest of Preeceville
Luck Lake, 6.4 km west of Birsay
Mallard Bay, 12.8 km north of Mortlach
Mud Lake, 16 km north of Wynyard
Muddy Lake, 11.2 km south of Unity
Opuntia Lake, 6.4 km east of Plenty
Paysen Lake, 30.5 km north of Chaplin
Saline Lake, 3.2 km southwest of Invermay
Silver Lake, 11.2 km north of Sheho
Snipe Lake, 11.2 km northwest of Eston
Stonewall Lake, 3.2 km south of Invermay
Teo Lake, 12.8 km west of Kindersley
Thackeray Lake, 3.2 km east of Thackeray
Thomson Lake, 4.8 km northwest of Lafleche
Waterhen Marsh, 6.4 km south of Kinistino

- That portion of the Waterhen River 4.8 km west and 3.2 km east from the Highway 4 crossing (8 km north of Dorintosh, WMZ 69).
- That portion of the South Saskatchewan River lying between Gardiner Dam and the north boundary of Township 30, Range 8, west of the Third Meridian.
- That portion of the South Saskatchewan River and Lake Diefenbaker lying between the Alberta border and Saskatchewan Landing Bridge.
- That portion of the North Saskatchewan River lying between the Paynton Ferry and the Borden Bridge.

Non-Toxic Shot Regulations

Hunters are not allowed to use lead shot for hunting waterfowl within a 200 meter zone of any named and permanent waterbody. The Gazatteer of Canada (national registry of geographical features including waterbodies) will be used to determine or verify if a waterbody is named.

It is important for hunters to know that both conditions - "named and permanent" must apply to any waterbody before the lead shot restriction applies. The majority of sloughs and dugouts found on private land do not meet this criteria and as such most likely do not fall within the lead shot restrictions. Contact your local Conservation Officer if you are unsure as to whether or not a particular waterbody has lead shot restrictions on it.

Beginning September 1, 1999 there will be a total ban on lead shot hunting for waterfowl across the province.

Lead shot can still be used for all upland game bird species (except lead shot is illegal while hunting upland birds in the Last Mountain Lake National Wildlife Area) including sharp-tailed grouse, ruffed grouse, spruce grouse, hungarian partridge, pheasant and ptarmigan. Further information on this regulation can be obtained from Environment Canada, Canadian Wildlife Service office in Saskatoon (306) 975-4919.

Trapping Information and Reg

Trapping is an important industry in Saskatchewan, with a value of one to seven million dollars per year depending on fur prices. Northern residents depend on raw fur sales for income when other sources of winter employment are limited. Southern trappers, many of whom are rural people, turn to trapping to supplement their income. In 1996-97, 3,217 trappers sold 203,403 pelts with a value of $2,990,892.

Conservation and humane use of our fur resource continues to be a priority for trappers. As a result, wild furbearing animals are plentiful in all regions of our province with the exception of the recently introduced swift fox. Trappers realize that fur animals are a renewable resource and that a long-term commitment to sustainable management practices is required to protect both the resource and the fur industry.

Humane Trapping

After many years of negotiation and lobbying, an International Humane Trapping Agreement (IHTA) was finally ratified by the European Union and Canada in December 1997. The IHTA applies to 12 Saskatchewan furbearers (coyote, wolf, lynx, bobcat, beaver, otter, muskrat, marten, fisher, weasel, racoon and badger) but excludes fox and mink. The IHTA standard applies to trapping, pest control and relocation of furbearers both in the European Union and Canada. Under the agreement, conventional steel-jawed leghold traps used in "restraining sets on land" will be banned effective April, 2001. Trappers will continue to be able to use leghold traps in drowning and quick-kill sets that meet the IHTA standard. Snares approved by SERM will be legal.

The Fur Institute of Canada will be testing traps and trapping methods based on the IHTA standard over the next five to eight years. It is anticipated that many existing traps, with the exception of the conventional steel-jawed restraining leghold on land, will meet the IHTA standard. Meanwhile, SERM will be working closely with various trapper associations in the province to ensure trapping is conducted in the most humane method possible and trapping continues to prosper as a sustainable and economically viable industry in Saskatchewan.

SERM will maintain a list of active trappers to assist livestock producers who may experience livestock losses, from coyote predation. Contact local SERM office for details.

Trapper Education

The Saskatchewan Trappers Association conducts trapper education workshops in various parts of the province. These workshops cover humane trapping techniques as well as pelt preparation and grading. First-time trappers and trappers wanting information about trapping education can contact the agencies listed below.

SERM - (306) 787-2314
Saskatchewan Trappers Association - (306) 278-3188
Treaty Harvesters - (306) 236-5883
Northern Fur Conservation Area Trappers Association - (306) 894-2187

Trapping Management Areas

Saskatchewan is divided into two general trapping regions; the Fur Conservation Blocks in the northern forest and the Southern Saskatchewan Wildlife Management Zones in agriculture Saskatchewan. Access to a Fur Conservation Block is limited to Saskatchewan residents by application through northern SERM offices. Any trapper who does not qualify for a licence in the Fur Conservation Block may trap in the Southern Wildlife Management Zones on lands where they have permission to trap.

1998-99 Seasons for Wild Furbearers

Species	Area	Season Dates	Fur Royalty
Arctic Fox		Nov. 1/98 - Feb. 28/99	$0.30
Badger		Nov. 1/98 - Apr. 15/99	$0.40
Bear	(in Fur Conservation Areas)	Oct. 15/98 - May 31/99	$1.60
Beaver	(in Fur Conservation Areas)	Oct. 15/98 - May 20/99	$0.40
	(outside Fur Conservation Areas)	Oct. 1/98 - May 31/99	$0.40
Bobcat		Nov. 1/98 - Feb. 15/99	$1.50
Coyote	(in Fur Conservation Areas)	Oct. 15/98 - Mar. 15/99	$0.70
	(outside Fur Conservation Areas)	Open Season	$0.70
Fisher		Nov. 1/98 - Feb. 28/99	$1.20
Fox	(in Fur Conservation Areas)	Oct. 15/98 - Jan. 31/99	$0.40
(red, silver, cross)	(outside Fur Conservation Areas)	Open Season	$0.40
Lynx		Dec. 1/98 - Feb. 28/99	$2.00
Marten		Nov. 1/98 - Feb. 28/99	$1.30
Mink		Nov. 1/98 - Feb. 15/99	$0.05
	(outside Fur Conservation Areas)	Oct. 15/98 - Apr. 30/99	$0.05
Otter		Nov. 1/98 - Apr. 30/99	$1.40
Raccoon		Open season	$0.20
Skunk		Open season	
Squirrel		Nov. 1/98 - Mar. 15/99	$0.05
Swift Fox		Closed season (Protected)	
Weasel		Nov. 1/98 - Feb. 28/99	$0.10
Wolf		Oct. 15/98 - Mar. 15/99	$3.00
Wolverine		Oct. 15/98 - Feb. 15/99	$4.50

ulations

It is a violation to:

- ► purchase or hold a fur licence unless he/she has:
  - – previously held a fur licence in Saskatchewan or elsewhere; or
  - – successfully completed a recognized trapping course; or
  - – passed an examination on trapping fur bearing animals. A first-time trapper examination can be written or taken verbally at any SERM office.
- ► take furbearing animals without a fur licence except coyotes, foxes, rabbits, raccoons, skunks and beavers (in some rural municipalities). Contact a conservation officer for details on which rural municipalities are open to beaver hunting without a licence.
- ► take furbearing animals except in open season.
- ► purchase or hold more than one fur licence.
- ► sell furs without purchasing a fur licence.
- ► sell, keep, tan, process or export furs without paying the fur royalties. The fur licence is valid for a 12-month period beginning on October 1 each year. Trappers no longer require a "holding permit" to hold furs after June 30, but royalties will have to be paid when a trapper exports, sells, keeps, tans or processes the fur.
- ► sell furs without providing the fur dealer with your fur licence number and the location where the furs were taken.
- ► send or take fur out of the province without first obtaining an export permit.
- ► tamper or interfere with any legally-placed traps unless authorized to do so.
- ► trap on any land without the permission of the landowner or occupant.
- ► use poison to take furbearing animals.
- ► not check traps that are holding devices or snares within a maximum time period of:
  - – one day when set on urban lands, or within five kilometres of the urban limits of any city or town exceeding 1,000 people, in the Southern Saskatchewan Wildlife Management Zones; or
  - – three days when set on any other lands in the South Saskatchewan Management Zones; or
  - – five days when set on lands within the Fur Conservation Block.
- ► use foot-hold traps for the destruction or capture of a furbearing animal other than a wolf, coyote, fox, lynx or bobcat unless the trap is set in a manner that will kill the animal with reasonable dispatch (ie. quick-kill trap).

Trappers Code of Ethics

- Obtain landowner permission before trapping.
- Use restraint of traps, such as the conibear and others with underwater drive hooks.
- Do not tamper with other trappers' traps or equipment.
- Check traps regularly, as early in the day as possible.
- Do not set traps where they might catch domestic animals.
- Report abnormal animal behavior or disease to a conservation officer.
- Record the location of trap sets carefully. They must be removed at the end of the trapping season.
- Help new trappers learn proper conservation and humane fur harvesting methods. Support humane trapper education programs.
- Dispose of animal carcasses properly so other people will not be offended.
- Persons harvesting on public lands (the provincial forest) are entering someone's trapline. Please respect the privacy necessary to run a trapping operation.

- ► use foot-hold traps for beaver, muskrat, otter or mink unless the trap is set so the animal drowns when caught. Conibear and other killing type traps are legal.
- ► use traps with serrated jaws or teeth to take furbearing animals.
- ► use neck snares without a special permit except to take beavers under the ice or squirrels and rabbits. Steel, spring-activated power neck snares may be used with a permit available from SERM offices. Mechanically-activated foot snares, set to catch an animal by the leg, may be used for all furbearing animals.
- ► trap bears except with mechanically activated foot snares or a "culvert cage" live trap.
- ► trap bears in the Southern Saskatchewan Wildlife Management Zones. People wishing to take bears outside of a Fur Conservation Block must purchase a hunting licence and hunt during the open season for bears or be a landowner protecting property.
- ► shoot muskrats except with a special permit, or unless you are a landowner protecting your property.
- ► hunt furbearing animals with a dog in some rural municipalities. Contact the conservation officer for details on open rural municipalities.
- ► hunt furbearing animals with a dog in a Fur Conservation Block.
- ► use foot-hold traps with an inside jaw opening more than 24 centimetres (9.5 inches).
- ► use hooks or sharp devices to snag or spear furbearing animals.
- ► use spring pole sets or set foothold traps on poles or in trees unless the trap is set to kill the animal.

The owner or occupant of any land:

- ► that completely surrounds a body of water has first rights to carry out trapping operations on that body of water.
- ► across which a river or stream flows, or which borders on a body of water, has first rights to carry out trapping operations on the lesser of:
  - – half the stream, river or body of water bordering his lands; or
  - – 30 metres out from the high water mark.

Problem Fur Animals

Raccoons, skunks, rabbits, coyotes, red foxes and beavers (in some rural municipalities) may be hunted year-round, without a licence, in Southern Saskatchewan Wildlife Management Zones. See the section on "Sunday Hunting" for some restrictions.

Note: A fur licence is still required to sell pelts. The fur royalty must be paid if you choose to keep, sell or export any pelts.

Beavers may be shot by:

- ► a landowner protecting his property.
- ► a trapper with a South Saskatchewan fur licence and the permission of the landowner.
- ► a trapper within a Fur Conservation Block fur licence operating in an area where special permission has been granted.
- ► anyone in rural municipalities where beaver are unprotected, provided they have the permission of the landowner.

Coyotes and red foxes may be taken:

- ► without a fur licence, by Saskatchewan residents only, in the Southern Saskatchewan Wildlife Management Zones provided that landowner permission is obtained if the land is posted.
- ► with any calibre firearm.
- ► anyone carrying a firearm to hunt coyotes and foxes may not accompany, aid or assist a person hunting big game.

Sunday Hunting

- ► During an open season for big game and game birds, hunting furbearing animals on Sunday is prohibited, except for trappers carrying out normal trapping operations. "Normal trapping operations" means taking furbearing animals with traps, where the trapper operates several sets at one time and checks them in a planned and regular manner.
- ► Trappers may carry rifles of .22 calibre or less on a Sunday to dispatch animals caught in traps. A person conducting normal trapping operations for bears in the Fur Conservation Block may use any calibre rifle.

1998 Saskatchewan Big Game Draw

Who's Eligible

- Only Saskatchewan residents, permanent members of the Armed Forces and R.C.M.P. who are stationed and living in the province.
- Applicants must be 12 years of age or older **on or before June 1, 1998.**
- All applicants under 18 years of age and all first-time hunters must be a graduate of a Firearm Safety/Hunter Education course before applying.
- Persons whose hunting rights are restricted for either a Wildlife Act conviction or a firearm accident as of June 1, 1998 are **not eligible** to apply.

How to Apply

1 Complete the application envelope

Fill out the application envelope (entitled 98-99 Big Game Draw), including the **return address** on the reverse side of the envelope.

Fill in your name and Personal Health Number **exactly** as they appear on your **Saskatchewan Health Services Card**. Permanent members of the Armed Forces and the R.C.M.P. use their regimental numbers.

Include a cheque or money order made payable to **Saskatchewan Environment and Resource Management**.

All successful applicants must buy a **Saskatchewan Wildlife Habitat Certificate** to validate their licence. **Do not send money for this certificate/licence.** It is purchased separately from any licence vendor or Saskatchewan Environment and Resource Management (SERM) office in the Province.

Separate applications are required for each species including **mule deer and non-trophy mule deer**. Print the words "Mule Deer" or "Non-trophy Mule Deer" in the species box to apply for these species.

Remember, **elk** is considered one species and requires only one application. When applying for elk, select zones based on the either-sex or non-trophy elk seasons. **If an applicant submits separate applications for non-trophy elk and either sex elk, they will be rejected as duplicate applications.**

Applications will be entered into the lowest priority pool of any person on the application. For example, if you apply on the same application with a person who has "C" Pool status, your application will be treated with "C" Pool priority, **regardless of your individual status**.

Individual pool status is determined in the following way: first time applicants are placed in "A" Pool; if you were drawn last year you will be in "C" pool status this year and advance one pool status each year that you are not drawn until you reach Super "A" pool. For example, if you were drawn in 1997 for elk, in 1998 you would be in "C" pool, in 1999 you would be in "B" pool, in 2000 you would be in "A" pool and if you applied again in 2001 you would be in Super "A" pool. Once you reach Super "A" status, you must apply each year to maintain that pool status until you are drawn.

In some areas of the province, game animals may be on private land where landowners will not grant you permission to hunt. Animals may also congregate in parks and game preserves or cross the border into a neighbouring Province or State. **Hunters must be aware that draw licences do not guarantee access to game animals.**

New for 1998

In past years some hunters found themselves in a dilemma! For reasons that included business commitment, unexpected illness to a hunting partner or perhaps not wanting to hunt both elk and moose the same year, hunters found that they had to apply on the Big Game Draw in order to maintain their current pool status. The end result was that some hunters who did not want to hunt that year did end up being drawn.

A change has been made to the Big Game Draw process to assist hunters who may be faced with this situation. For 1998, if you wish to maintain your current pool status but do not want to be drawn for a particular species, simply mark **"99"** as your one and only choice in the zone selection space on the draw application form. Remember, the application must be completely filled out as in the past but only mark "99" as your zone choice.

2 Mail the completed application envelope

SERM must receive your application, postmarked no later than **June 1, 1998 or hand delivered to the Regina office only before 5:00 p.m., C.S.T., June 1, 1998.** Remember, Canada Post sometimes date stamps mail the following day and, therefore, your application may be rejected. Avoid disappointment and mail your application early.

[redacted]

The department no longer operates Big Game Draw phone lines for draw results. All licences and unsuccessful applications will be mailed prior to August 1, 1997. If you have not received your licence or returned application by August 1, please contact Fish and Wildlife Branch at 787-2314.

For further draw information and assistance, please contact:

Saskatchewan Environment
and Resource Management
Fish and Wildlife Branch
Room 436, 3211 Albert Street
Regina, SK, S4S 5W6.

Note: Quotas shown for all big game species are tenta'

F3 -13

ig Game Draw - Saskatchewan Residents only

w Elk

nbined Zones 6 and 7 st of Highway No. 271 and Grid Road No. 615) (Designate Zone 6) **Note**: Hunters drawn for combined Zones 6 and 7 may hunt in any one or all of these seasons.	Archery and Muzzleloader Sept. 14 - Sept. 19	one elk, non-trophy	• 1998 licence quotas for elk: 6 and the east portion of 7 combined (100), the west portion of 7(100), 33(25), 37(40), GPE(50), 42(75), 43(75), 50(75) and 52(25). • **Note**: Archery and muzzleloader seasons overlap rifle seasons in some zones. • Except in Zones 6, 7, 33 and 37, hunters holding a draw elk licence may hunt white-tailed deer during the draw elk season, but only in the zone in which their draw elk licence is valid. • Non-trophy elk means a cow or a 1998 calf. • Prior to Oct. 18,1998 ATV use in Greenwater Lake Provincial Park is restricted to retrieval of big game or for hauling baits (by permit only).
	Archery, Rifle and Muzzleloader Nov. 2 - Nov. 14	one elk, either-sex	
	Archery, Rifle and Muzzleloader Nov. 30 - Dec. 5	one elk non-trophy	
ıe 7 (west of Highway No. 271 and Grid Road No. 615), luding Cypress Hills Provincial Park (West Block) (Designate Zone 7)	Archery and Muzzleloader Sept. 14 - Sept. 19	one elk, either sex	
	Archery, Rifle and Muzzleloader Oct. 26 - Nov. 7 and Nov. 30 - Dec. 12	one elk, either-sex	
nes 33 and 37, including Moose Mountain and ck Mountain provincial parks eenwater Lake Provincial Park Only (Designate Zone GPE)	Archery, Rifle and Muzzleloader Sept. 9 - Sept. 26	one elk, either-sex	
nes 42 and 43	Archery Sept. 14 - Sept. 19 Muzzleloader Oct. 12 - Oct. 17 Archery, Rifle and Muzzleloader Oct. 26 - Oct. 31	one elk, either-sex	
rt a la Corne Wildlife Management Unit (Designate Zone 50) mbined Zones 52 and 54 (east of Highway No. 40) (Designate Zone 52)	Archery, Rifle and Muzzleloader Aug. 31 - Sept. 19	one elk, either-sex	

raw Non-Trophy Elk Only

ne 37 including Duck Mountain Provincial Park (Designate Zone 37A) eenwater Lake Provincial Park Only (Designate Zone GPA) mbined Zones 40, 48, 56 and 57 including und Lake Recreation Site (Designate Zone 48) mbined Zones 49, 58 and 59, including Wildcat Hill Provincial Park (Designate Zone 49) ne 50 (east of Highway No. 6 and Grid Road No. 692) (Designate Zone 50A)	Archery, Rifle, and Muzzleloader Nov. 23 - Nov. 28	one elk, non-trophy	• 1998 licence quotas for non-trophy elk: GPA(50), 48(350), 49(250), 37A(60) and 50A(50). • Zone 50 non-trophy season does not include Fort a la Corne Wildlife Management Unit. • Horsehide Lake Wildlife Management Unit will be open for **archery elk only** during any open elk season in Zone 49.

raw Non-trophy Mule Deer

ne 11 and 45	Archery Sept. 7 - Oct. 31 Muzzleloader Oct. 5 - Oct. 31 Rifle Nov. 9 - Nov. 14	one non-trophy mule deer	• 1998 licence quotas for non-trophy mule deer 11(50), 45(100), 46(100) • Non-trophy mule deer is a doe or a 1998 fawn.
ne 46	Archery Sept. 7 - Oct. 31 Muzzleloader Oct. 5 - Oct. 31 Rifle Nov. 16 - Nov. 21	one non-trophy mule deer	

Wildlife Management Zones

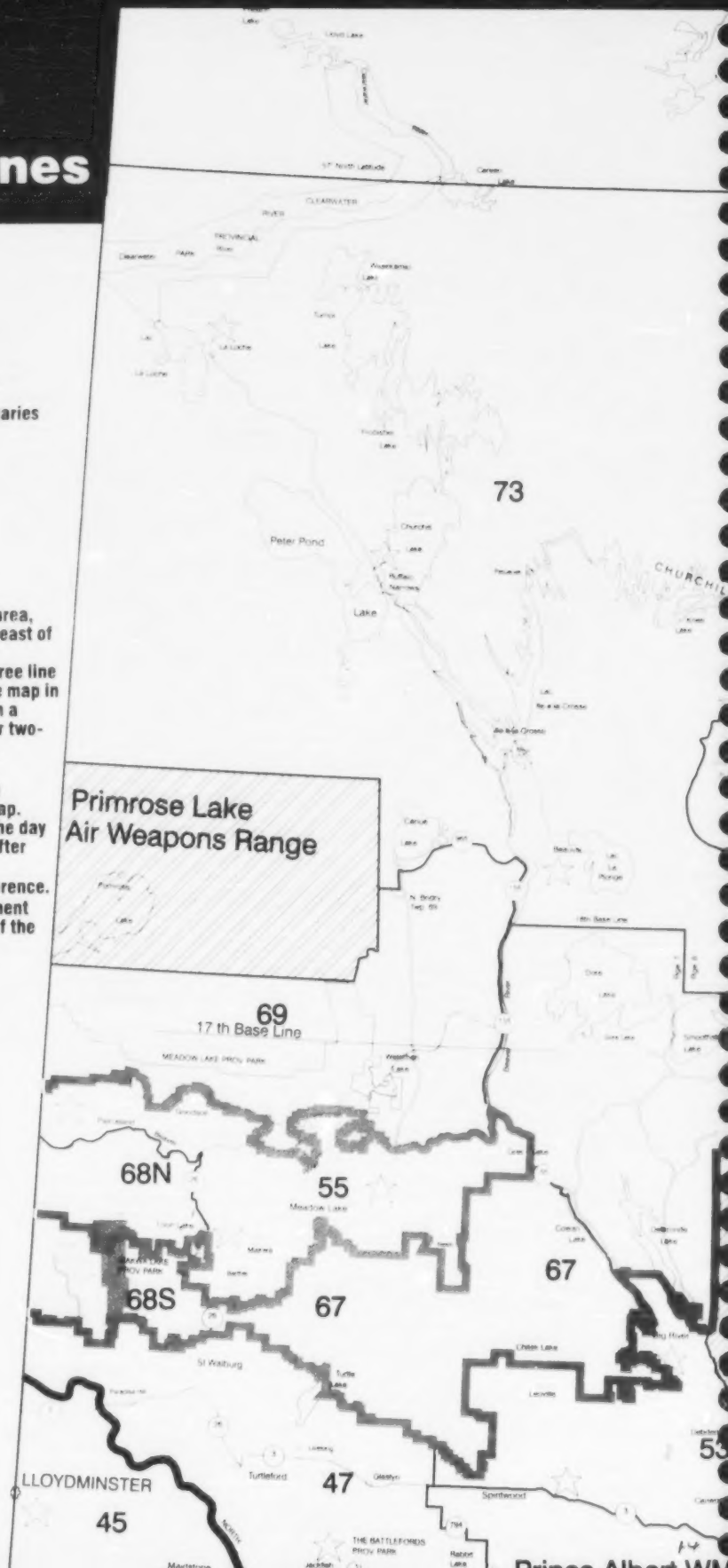
Legend

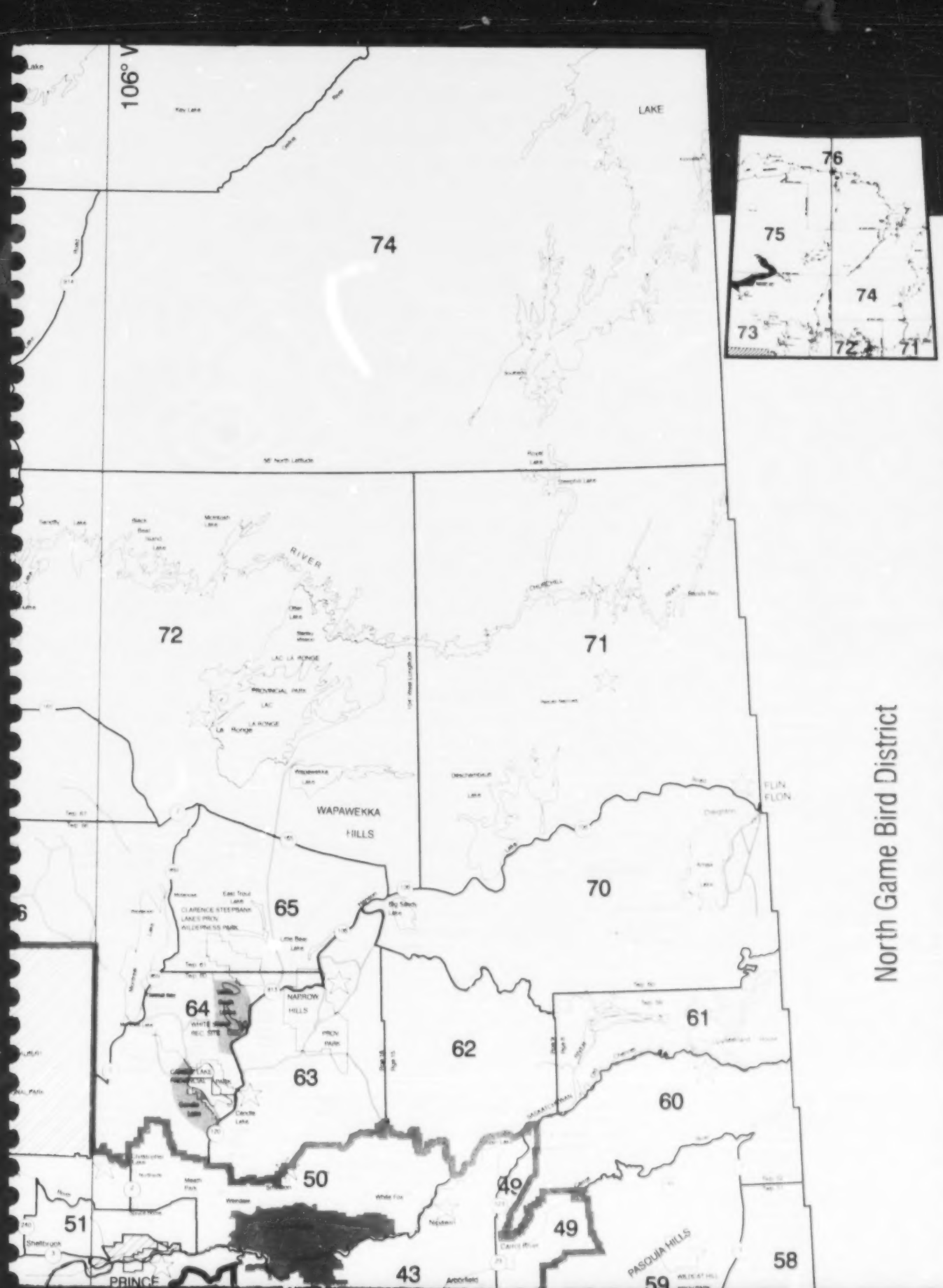
- Provincial Forest
- Provincial Forest Boundary
- Department Offices
- Wildlife Management Units and Recreation Sites
- Game Preserves, Wildlife Refuges and Bird Sanctuaries
- Road Corridor Game Preserves (RCGP)
- Shotgun-Archery- Muzzleloader Areas
- No Hunting Areas
- North / South Game Bird District Dividing Line

As a general guide to calculate times for your hunting area, subtract one minute for every 16 kilometres (10 miles) east of 106 degrees longitude or add one minute for every 16 kilometres west of 106 degrees longitude. The 106 degree line of longitude is shown on the Wildlife Management Zone map in bold print. The times listed below were determined from a central geographic location (Davidson) within the lower two-thirds of the province where most hunting takes place.

To help calculate times for your hunting areas, the map (in centrefold) includes minutes at the bottom of the map. Legal hunting time for wildlife includes that period of the day from one-half hour before sunrise until one-half hour after sunset. All times are Central Standard time.
The sunrise/sunset times are to be considered as a reference. Hunters should check with television, radio or Environment Canada to learn the sunrise/sunset times for the area of the province they are going to hunt.

1998 Week Ending	Sunrise (a.m.)	Sunset (p.m.)
April 11	6:17	7:53
April 18	6:02	8:05
April 25	5:48	8:16
May 2	5:34	8:28
May 9	5:22	8:39
May 16	5:11	8:49
May 23	5:02	8:59
May 30	4:55	9:08
June 6	4:50	9:15
June 13	4:46	9:20
June 20	4:48	9:23
June 27	4:50	9:24
August 15	5:51	8:26
August 22	6:02	8:12
August 29	6:13	7:57
September 5	6:24	7:41
September 12	6:35	7:26
September 19	6:46	7:10
September 26	6:57	6:54
October 3	7:08	6:38
October 10	7:20	6:22
October 17	7:31	6:07
October 24	7:43	5:53
October 31	7:56	5:40
November 7	8:08	5:27
November 14	8:20	5:17
November 21	8:32	5:08




106° W
LAKE
74
76
75
74
73
72
71
72
71
RIVER
LAC LA RONGE
PROVINCIAL PARK
LAC
LA RONGE
WAPAWEKKA
HILLS
FUN
FLON
70
65
64
NARROW
HILLS
63
62
61
60
50
49
51
49
43
PASQUIA HILLS
58
59
PRINCE
North Game Bird District

November 28	8:42	5:02
December 5	8:52	4:57
December 12	9:00	4:56
December 19	9:05	4:57

April

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

August

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October

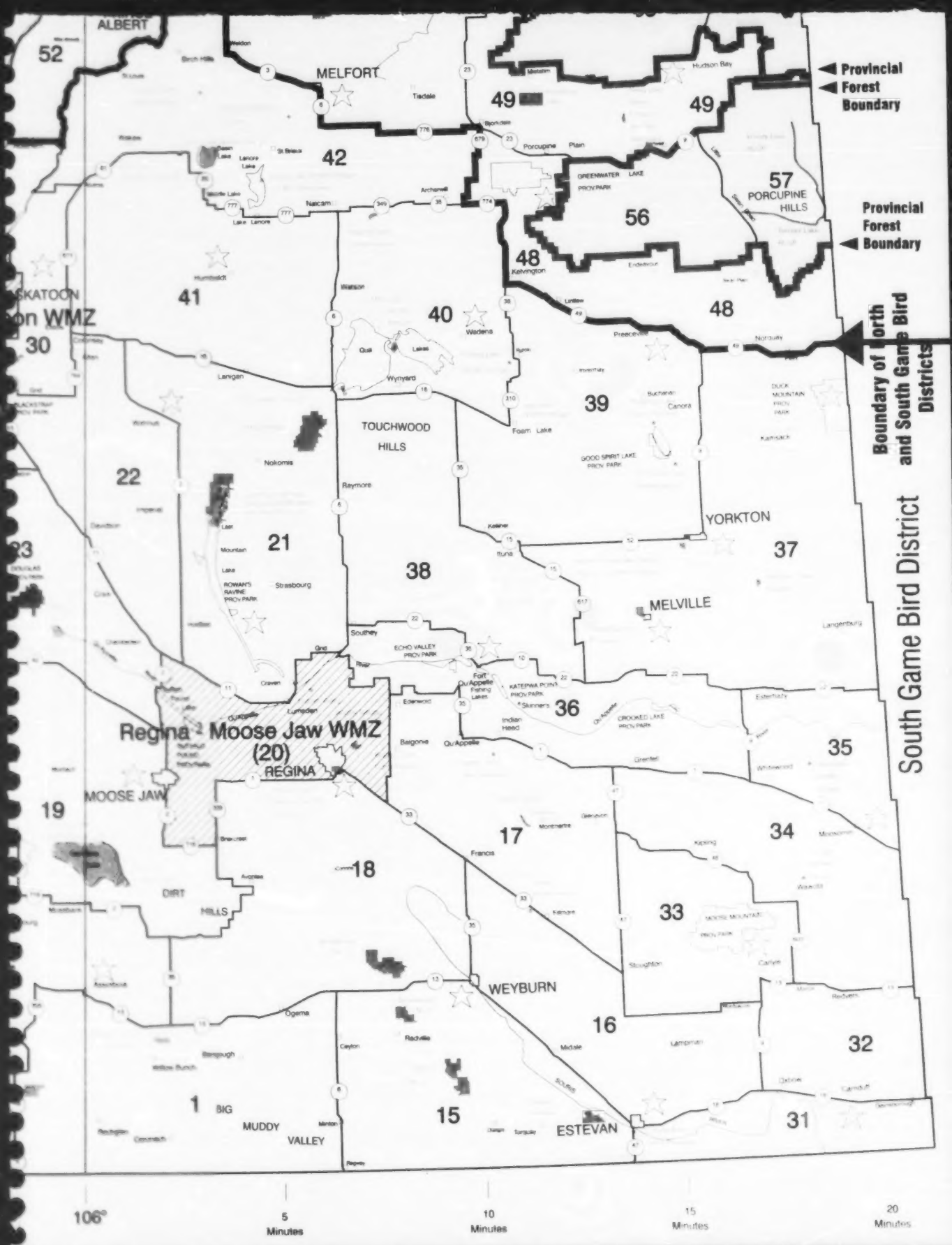
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		


Provincial Forest Boundary
Provincial Forest Boundary
Boundary of North and South Game Bird Districts
South Game Bird District
Regina - Moose Jaw WMZ (20)
REGINA
MOOSE JAW
MELFORT
ESTEVAN
WEYBURN
YORKTON
MELVILLE
TOUCHWOOD HILLS
DIRT HILLS
BIG MUDDY VALLEY
PORCUPINE HILLS
ECHO VALLEY PROV. PARK
ROWAN'S RAVINE PROV. PARK
GOOD SPIRIT LAKE PROV. PARK
GREENWATER LAKE PROV. PARK
DUCK MOUNTAIN PROV. PARK
KATEPWA POINT PROV. PARK
CROOKED LAKE PROV. PARK
MOOSE MOUNTAIN PROV. PARK
106°
5 Minutes
10 Minutes
15 Minutes
20 Minutes

Species	Wildlife Management Zones Open	Season Dates	Bag Limit	Additional Information
Draw Mule Deer				
Zones 1, 2, 3, 5, 6, 7, 9 to 13, 15, 18, 19, 21 to 31, 36, 40, 41, 42, 44, 45, 47 54, 55, including Saskatchewan Landing and Cypress Hills (West Block) provincial parks; that portion of Douglas Provincial Park located west of Diefenbaker Lake (Qu'Appelle Arm); Brokenshell No. 1 and No. 2 and Elbow and Great Bend wildlife management units Zone 14 east of the Lemsford Ferry grid road (Grid #649) (Designate Zone14E) Zone 14 west of the Lemsford Ferry grid road (Grid #649) (Designate Zone 14W) Combined Zones 16, 17 and 33 (Designate Zone 16)	Archery Sept. 7 - Oct. 31 Muzzleloader Oct. 5 - Oct. 31 Rifle Nov. 2 - Nov. 14	one mule deer, either-sex	• 1998 licence quotas for mule deer: 1(200), 2(300), 3(100), 5(50), 6(150), 7(50), 9(75), 10(200), 11(50), 12(50),13(100),14W(100), 14E(100), 15(75), 16, 17 and 33 combined (50), 18(75), 19(200), 20(75), 21(75), 22(50), 23(150), 24(150), 25(100), 26(125), 27(100), 28(50), 29(150), 30(70) ,SMZ(35), 31(25), 36(25), 40(50), 41(50), 42(25), 44(50), 45(200), 46(150), 47(100), 54(50), 55(50). • Hunters holding both an either-sex and a non-trophy mule deer licence may hunt non-trophy mule deer during these season dates, but only in the zone in which their non-trophy licence is valid.
Saskatoon Wildlife Management Zone only (Designate Zone SMZ) Regina/Moose Jaw Wildlife Management Zone (Designate Zone 20)	Archery Sept. 7 - Oct. 31 Muzzleloader Oct. 5 - Oct. 31 Archery, Muzzleloader and Shotgun Nov. 2 - Nov. 28	one mule deer, either-sex	• Archery and muzzleloader hunting only in Saskatchewan Landing Provincial Park and Great Bend Wildlife Management Unit. • Shotgun-Archery-Muzzleloader only in Regina/ Moose Jaw and Saskatoon wildlife management zones.
Zone 46	Archery Sept. 7- Oct. 31 Muzzleloader Oct. 5 - Oct. 31 Rifle Nov. 9 - Nov. 21	one mule deer, either-sex	• The opening date in Saskatchewan Landing, Douglas and Cypress Hills (West Block) provincial parks is delayed until September 9. • Vehicles are restricted to designated park roads within Saskatchewan Landing Provincial Park. Vehicles may not leave those roads for any purpose.
Draw Moose			
Combined Zones 6 and 7 (east of Highway No. 271 and Grid Road No. 615) (Designate Zone 6)	Rifle Nov. 2 - Nov. 7	one moose either-sex	• 1998 licence quotas for moose: 6 and 7(50), 37(100), 40(25), 48, 49 and 56 combined (100), 50(50), 54(50), 57(50), 58(50), 59(75), 62(50), 63(50), 64(50), 65(50), 66(100), GPE - Greenwater Lake Provincial Park (50). • Archery and muzzleloader seasons overlap rifle season in some zones. • Except in Zones 6, 7, and 37, hunters holding a draw moose or elk licence may hunt white-tailed deer during the draw season, but only in the zone in which their draw licence is valid.
Zone 54	Rifle Nov. 9 - Nov. 14	one moose, either-sex	
Zone 37, including Duck Mountain Provincial Park	Archery and Muzzleloader Sept. 21 - Oct. 3 Rifle Nov. 2 - Nov.14	one moose, either-sex	
Combined Zones 40 and 42 (Designate Zone 40) Combined Zones 48, 49 and 56, including Round Lake Recreation Site (Designate Zone 48) Greenwater Lake Provincial Park (Designate Zone GPE) Zones 57 to 59, 62 to 66, including Narrow Hills, Wildcat Hill and Clarence-Steepbank Lakes provincial parks	Archery and Muzzleloader Sept. 21 - Oct. 3 Rifle Sept.21 - Sept. 26 and Nov. 2 - Nov. 14	one moose, either-sex	• Prior to Oct. 18, 1998 ATV use in Greenwater Lake Provincial Park is restricted to retrieval of big game or for hauling baits (by permit only).
Fort a la Corne Wildlife Management Unit Only (Designate Zone 50)	Archery and Muzzleloader Sept. 21 - Oct.3 Rifle Sept. 21 - Oct. 3 and Nov. 2 - Nov. 14	one moose, either-sex	

Saskatchewan Residents - Regular Seasons

White-tailed Deer

Zones 1 to 41, 44 to 46, including Brokenshell No. 1 and No. 2, Elbow and Great Bend Wildlife Management Units; Cypress Hills (West Block), Duck Mountain, Moose Mountain and Saskatchewan Landing provincial parks and that portion of Douglas Provincial Park located west of Diefenbaker Lake (Qu'Appelle Arm), and starting Nov. 16 Estevan-Cambria and Lamonde No. 3 wildlife management units and Last Mountain Lake National Wildlife Area.	Archery Sept. 7 - Oct. 31 Muzzleloader Oct. 5 - Oct. 31 Rifle Nov. 16 - Dec. 5	one white-tailed deer, either-sex	• Archery and muzzleloader hunting only in Saskatchewan Landing Provincial Park and Great Bend Wildlife Management Unit. • Estevan-Cambria and Lomond No. 3 wildlife Management Units and the Last Mountain Wildlife Area are closed to deer hunting until Nov. 16.
Regina/Moose Jaw and Saskatoon wildlife management zones **Use of rifles prohibited.**	Archery Sept. 7 - Dec. 5 Muzzleloader Oct. 5 - Dec. 5 Shotgun Nov. 2 - Dec. 5	one white-tailed deer, either-sex	• Where hunting is permitted in a provincial park or recreation site, the opening date is delayed until September 9. • Shotgun-archery-muzzleloader only in Regina/Moose Jaw and Saskatoon wildlife management zones.
Zones 42, 43, 47 to 55, including Fort a la Corne and Horsehide Lake Wildlife Management Units	Archery Sept. 7 - Oct. 31 Muzzleloader Oct. 5 - Oct. 31 Rifle Nov. 2 - Dec. 5	one white-tailed deer, either-sex	• Vehicles are restricted to designated trails within CypressHills (West Block) Provincial Park and Brokenshell No.1 and No.2 wildlife management units. • Prior to Oct. 18, 1998 ATV use in Greenwater Lake Provincial Park is restricted to retrieval of big game or or hauling baits (by permit only).
Prince Albert Wildlife Management Zone - **Archery only**	Archery Sept. 7 - Dec. 5	one white-tailed deer, either-sex	• Vehicles are restricted to designated park roads within Saskatchewan Landing Provincial Park. Vehicles may not leave the road for any purpose.
Zones 56 to 66, 69, including Greenwater Lake, Meadow Lake, Narrow Hills, Wildcat Hill and Clarence-Steepbank Lakes provincial parks; and Round Lake Recreation Site	Archery Aug. 31 - Oct. 31 Muzzleloader Sept. 7 - Oct. 31 Rifle Sept. 28 - Oct. 24 and Nov. 2 - Dec. 5	one white-tailed deer, either-sex	• Non-trophy white-tailed deer is a doe or 1998 fawn.
Zones 67, 68S and 68N including Bronson Forest Recreation Site	Archery Aug. 31 - Oct. 31 Muzzleloader Sept. 7 - Oct. 31 Rifle Nov. 2 - Dec. 5	one white-tailed deer, either-sex	
Zones 70 to 76, including Clearwater River and Lac La Ronge provincial parks	Archery, Rifle and Muzzleloader Aug. 24 - Dec. 5	one white-tailed deer, either-sex	

Non-trophy White-tailed Deer

Zones 1, 4, 15 to 22, and 30 to 40 including Brokenshell No. 1 and No. 2 management units; Last Mountain Lake National Wildlife Area; and Moose Mountain and Duck Mountain provincial parks and starting Nov. 16 Estevan - Cambria and Lamonde No. 3 wildlife management units and The Last Mountain Lake National Wildlife Area.	Archery Sept. 7 - Oct. 31 Muzzleloader Oct. 5- Oct. 31 Rifle Nov. 16 - Dec. 5	one non-trophy white-tailed deer
Zones 42, 43, 47 to 55, including Fort a la Corne and Horsehide Lake wildlife management units	Archery Sept. 7 - Oct. 31 Muzzleloader Oct. 5 - Oct. 31 Rifle Nov. 2 - Dec. 5	one non-trophy white-tailed deer
Regina/Moose Jaw and Saskatoon wildlife management zones **Use of rifles prohibited.**	Archery Sept. 7 - Dec. 5 Muzzleloader Oct. 5 - Dec. 5 Shotgun Nov. 2 - Dec. 5	one non-trophy white-tailed deer
Prince Albert Wildlife Management Zone - **Archery Only**	Archery Sept. 7 - Dec. 5	two non-trophy white-tailed deer

Archery Mule Deer

Zones 1 2, 3, 5, 6, 7, 13 to 19, 21 to 31, 33, 36, 40, 41 to 47, 54, 55, Regina/Moose Jaw and Saskatoon WMZs, including Saskatchewan Landing and Cypress Hills (West Block) provincial parks; and that portion of Douglas Provincial Park located west of Diefenbaker Lake (Qu'Appelle Arm); and Brokenshell No. 1 and No. 2, Elbow and Great Bend wildlife management units	Sept. 7 - Oct. 31	one mule deer either-sex	• Where hunting is permitted in a provincial park, the opening date is delayed until September 9. • Vehicles are restricted to designated trails within Cypress Hills (West Block) Provincial Park, Brokenshell No. 1 and No. 2 and Elbow wildlife management units; and Dundurn, Park and Rudy-Rosedale PFRA communitypastures. • Vechiles are restricted to designated park roads only in Saskatchewan Landing Provincial Park.

Barren Ground Caribou

Residents of Zone 76 only	Oct. 15 1998 to April 15, 1999	two barren ground caribou either sex (separate licences)	• "Resident of Zone 76" means a Saskatchewan resident who has lived in Zone 76 for three months. immediately preceding the date of licence purchase.

Moose

Early Season			
Zones 37, 55, 68S and 68N including Duck Mountain Provincial Park and the Bronson Forest Recreation Site	Archery Sept. 21 - Oct. 3	one moose, either-sex	• Unsuccessful archers may hunt during the regular rifle seasons, but must adhere to bag limit and dress regulations. • The antlers of bull moose and the lower jaw of calf moose must accompany the carcass in the rifle season. • Hunters may hunt white-tailed deer during the regular moose and elk seasons if they hold a valid elk or moose licence and hunt in a Forest Wildlife Management Zone which is open to regular elk or moose at the time of hunting.
Zones 43, 48, 49, 50, 53, 56 to 67, 69, including Narrow Hills, Meadow Lake, Wildcat Hill and Clarence-Steepbank Lakes provincial parks and Round Lake Recreation Site	Archery Sept. 21 - Oct. 3	one moose, either-sex	
	Rifle Oct. 12 - Oct. 17	one bull or one 1998 calf moose	
Zones 70 to 73, including Lac La Ronge and Clearwater River provincial parks (south of 57 degrees north latitude)	Archery Sept. 21 - Oct. 3	one moose, either-sex	
	Rifle Sept. 7 - Sept. 19 and Oct. 5 - Nov. 28	one bull or one 1998 calf moose	
Zones 74 to 76, including Clearwater River Provincial Park (north of 57 degrees north latitude)	Archery Aug. 24 - Oct. 10	one moose, either-sex	
	Rifle Aug. 24 - Oct. 10	one bull or one 1998 calf moose	
Late Season			
Zones 43, 47 (north of Highway No. 3 and west of Highway No. 26), 48 to 50, 53, 55 to 69, including Narrow Hills, Wildcat Hill, Meadow Lake and Clarence-Steepbank Lakes provincial parks; and Bronson Forest and Round Lake recreation sites	Rifle Nov. 16 - Nov. 21	one bull or one 1998 calf moose	

Guided Moose - All Hunters

Zones 60 to 62, 69	Archery Sept. 21 - Oct. 3	one moose, either-sex	• The antlers of bull moose and the lower jaw of calf moose must accompany the carcass. • Hunters holding a guided moose licence may hunt white-tailed deer during the guided moose season, but only in the zone in which their guided moose licence is valid.
	Rifle Sept. 28 - Oct. 17 and Nov. 2 - Nov. 21	one bull or one 1998 calf moose	
Zones 70 to 73, including Lac La Ronge and Clearwater River (south of 57 degrees north latitude) provincial parks	Archery Sept. 21 - Oct. 3	one moose, either-sex	
	Rifle Sept. 7 - Sept. 19 and Oct. 5 - Nov. 28	one bull or one 1998 calf moose	
Zones 74 to 76, including Clearwater River Provincial Park (north of 57 degrees north latitude)	Archery Aug. 24 - Oct. 10	one moose, either-sex	
	Rifle Aug. 24 - Oct. 10	one bull or one 1998 calf moose	

Elk

Zone 47 (north of Highway No. 3 and No. 26),	Archery Aug. 24 - Sept. 5 and Sept. 28 - Oct. 3	one elk, either-sex
Zones 47 (east of Highway No. 4, west of Grid Road No. 696, and north of Highway No. 3), 48, 49, 56 to 59, including Wildcat Hill Provincial Park and Round Lake Recreation Site, 67 (east of Highway No. 4, west of Grid Road number 696 and south of the 14th baseline) Zones 50, 53, 60 to 66, 68S, 69, including Narrow Hills, Meadow Lake and Clarence-Steepbank Lakes provincial parks	Archery, Rifle and Muzzleloader Sept.14 - Sept. 26	one antlered elk
Horsehide Lake Wildlife Management Unit (Archery Only)	Archery Only Aug. 24 - Sept. 5 and Sept. 14 - Oct.3 and Nov. 23 - Nov. 28	one elk, either-sex
Zone 53 (east of Highway No. 55)	Rifle Nov. 16 - Nov. 28	one elk, either-sex

- Antlered Elk means an elk having an antler or antlers at least 15 centimetres long as measured from the outside of the skull to the tip.
- The antlers of bull elk must accompany the carcass in the antlered elk season.
- Hunters may hunt white-tailed deer during the regular elk seasons in the Forest Wildlife Management Zones only, and Horsehide Lake Wildlife Management Unit (Archery Only).

Note: Archery and muzzleloader seasons overlap rifle seasons in some zones.

Bear - All Hunters

Spring Season 1998 and 1999 dates

Zones 30, 35 to 40, 42 to 69, including Narrow Hills, Wildcat Hill and Clarence-Steepbank Lakes provincial parks; Fort a la Corne and Horsehide Lake wildlife management units; and Bronson Forest Recreation Site	Archery, Rifle and Muzzleloader Apr. 13 - June 13, 1998 Apr. 12 - June 12, 1999	one bear, either-sex
Zones 70 to 76	Archery, Rifle and Muzzleloader Apr. 27 - June 27, 1998 Apr. 26 - June 26, 1999	one bear, either-sex
Duck Mountain, Greenwater Lake and Meadow Lake provincial parks	Archery, Rifle and Muzzleloader Apr. 13 - May 30, 1998 Apr. 12 - May 29, 1999	one bear, either-sex
Lac La Ronge and Clearwater River provincial parks	Archery, Rifle and Muzzleloader Apr. 27 - May 30, 1998 Apr. 26 - May 29, 1999	one bear, either-sex

- Non-residents of Canada must use the services of a licensed guide or outfitter.
- Unused spring bear licences are valid in the fall season.
- Prior to Oct. 18, 1998 ATV use in Greenwater Lake Provincial Park is restricted to retrieval of big game or for hauling baits (by permit only).

Fall Season 1998

Zones 30, 35 to 40 and 42 to 76 including Wildcat Hill and Clarence-Steepbank Lakes provincial parks	Archery, Rifle and Muzzleloader Aug. 24 - Oct. 10	one bear, either-sex
Clearwater River, Meadow Lake, Narrow Hills and Lac La Ronge provincial parks and Bronson Forest Recreation Site	Archery, Rifle and Muzzleloader Sept. 2 - Oct. 10	one bear, either-sex
Greenwater Lake and Duck Mountain provincial parks, and Fort a la Corne Wildlife Management Unit	Archery, Rifle and Muzzleloader Sept. 21 - Oct. 10	one bear either-sex

Canadian Residents and Non-Residents of Canada

White-tailed Deer

Zones 56 to 66, 69, including Greenwater Lake, Meadow Lake, Narrow Hills, Wildcat Hill and Clarence-Steepbank Lakes provincial parks; and Round Lake Recreation Site	Archery Aug. 31 - Oct. 31 Muzzleloader Sept. 7 -Oct. 31 Rifle Sept. 28 - Oct. 10 and Nov. 2 - Dec. 5	one white-tailed deer, either-sex	• Where hunting is permitted in a provincial park or recreation site, the opening date is delayed until September 9. • Non-residents of Canada must use the services of a licensed guide or outfitter. • Non-resident white-tailed deer archery, muzzleloader and rifle seasons are in place in forest zones and in portions of some forest fringe zones. For additional information contact SERM field office. • Prior to Oct. 18, 1998 ATV use in Greenwater Lake Provincial Park is restricted to retrieval of big game or for hauling baits (by permit only).
Zones 67, 68S and 68N including Bronson Forest Recreation Site	Archery Aug. 31 - Oct. 31 Muzzleloader Sept. 7 - Oct. 31 Rifle Nov. 2 - Dec. 5	one white-tailed deer, either-sex	
Zones 70 to 76, including Clearwater River and Lac La Ronge provincial parks	Archery, Rifle and Muzzleloader Aug. 24 - Dec. 5	one white-tailed deer, either-sex	

White-tailed Deer (Canadian Residents Only)

Zones 1 to 14, 24 to 27, 46, including the Cypress Hills (West Block) and Saskatchewan Landing provincial parks	Rifle Nov. 30 - Dec 5	one white-tailed deer, either-sex	• Archery and muzzleloader hunting only in Saskatchewan Landing Provincial Park and Great Bend Wildlife Management Unit. • Shotgun-archery-muzzleloader only in Regina/Moose Jaw and Saskatoon wildlife management zones. Shotguns may not be used in the Muzzleloader season. • Archery and muzzleloader hunting only in Saskatchewan Landing Provincial Park • Vehicles are restricted to designated trails within Cypress Hills (West Block) and designated park roads only in Saskatchewan Landing provincial parks; and Brokenshell No. 1 and No. 2 Wildlife Management Units. • Non-trophy white-tailed deer is a doe or a 1998 fawn
Zones 15 to 19, 21 to 23, 28 to 41, 44, 45, including Brokenshell No. 1 and No. 2, Estevan-Cambria, Elbow, Great Bend and Lomond No. 3 wildlife management units; Last Mountain Lake National Wildlife Area; Duck Mountain and Moose Mountain provincial parks and that portion of Douglas Provincial Park located west of Diefenbaker Lake (Qu'Appelle Arm)	Rifle Nov. 23 - Dec. 5	one white-tailed deer, either-sex	
Regina/Moose Jaw and Saskatoon Wildlife Management Zones **Use of rifles prohibited.**	Archery Sept. 7 - Dec. 5 Muzzleloader Oct. 5 - Dec.5 Shotgun Only Nov. 2 - Dec. 5	one white-tailed deer, either sex	
Zones 42, 43, 47 to 55, including Fort a la Corne and Horsehide Lake Wildlife Management Units	Rifle Nov. 16 - Dec. 5	one white-tailed deer, either-sex	
Prince Albert Wildlife Management Zone - **Archery Only**	Archery Nov. 16 - Dec. 5	one white-tailed deer, either sex	

Non-trophy White-tailed Deer - Canadian Residents Only

Zones 1 and 4	Rifle Nov. 30 - Dec. 5	one non-trophy white-tailed deer
Zones 42, 43, 47 to 55, including Fort a la Corne and Horsehide Lake Wildlife Management Units	Rifle Nov. 16 - Dec. 5	one non-trophy white-tailed deer
Prince Albert Wildlife Management Zone - **Archery Only**	Archery Nov. 16 - Dec. 5	one non-trophy white-tailed deer
Zones 15 to 22, and 30 to 40, including Brokenshell No. 1 and No. 2, Estevan-Cambria and Lomond No. 3 Wildlife Management Units; Last Mountain Lake National Wildlife Area and Duck Mountain and Moose Mountain provincial parks.	Rifle Nov. 23 - Dec. 5	one non-trophy white-tailed deer
Regina/Moose Jaw and Saskatoon wildlife management zones **Use of rifle prohibited**	Archery Sept. 7 - Dec.5 Muzzleloader Oct. 5 - Dec.5 Shotgun Only Nov. 2 - Dec. 5	one non-trophy white-tailed deer

Guided Moose - All Hunters See Page 16

Bear - All Hunters see Page 17

Game Birds - All Hunters

Sharp-tailed Grouse; Ruffed Grouse; Spruce Grouse; Hungarian Partridge - All Hunters

North Game Bird District including Clearwater River, Greenwater Lake, Lac La Ronge, Meadow Lake, Narrow Hills, Wildcat Hill and Clarence-Steepbank Lakes provincial parks; Fort a la Corne and Horsehide Lake wildlife management units; and Bronson Forest and Round Lake recreation sites	Sept. 14 - Dec. 5	**Sharp-tailed Grouse:** 3 daily **Ruffed Grouse and Spruce Grouse:** 10 each daily
South Game Bird District including Duck Mountain and Moose Mountain provincial parks, and starting Sept. 22, Last Mountain Lake National Wildlife Area, and starting Oct. 1, Estevan-Cambria and Lomond Wildlife Management Units, and that portion of Douglas Provincial Park located west of Diefenbaker Lake (Qu'Appelle Arm), and starting Oct. 15, Elbow Wildlife Management Unit	Sept. 14 - Nov. 14 **Sharp-tailed Grouse closes Oct. 31**	**Hungarian Partridge:** 6 daily **Possession:** 2 times daily limit

Note: Non-Residents of Canada are restricted to hunting Sharp-tailed Grouse and Hungarian Partridge in Zones 1 to 8, 15 to 24, 29 to 42, 44 to 46 and Saskatoon and Regina/Moose Jaw Wildlife Management Zones.

Pheasants - Saskatchewan Residents Only

South Game Bird District including Estevan-Cambria and Lomond No. 3 Wildlife Management Units	Oct. 5 - Nov. 14	3 daily (cocks only) **Possession:** 2 times daily limit

Ptarmigan - All Hunters

North Game Bird District: Zones 61 to 66, 69 to 76, including Clearwater River and Lac La Ronge provincial parks	Nov. 2/98 - Mar. 31/99	10 daily **Possession:** 2 times daily limit

Hungarian Partridge, Pheasant - Saskatchewan Resident Late Seasons

South Game Bird District: Zones 1 to 19, 24, 31, Regina/Moose Jaw Wildlife Management Zone and Estevan-Cambria and Lomond No. 3 wildlife Management Units	Dec. 7 - Dec. 26	**Pheasants:** 3 daily (cocks only) **Hungarian Partridge:** 6 daily **Possession:** 2 times daily limit

Ducks,Coots,Snipe - All Hunters

North Game Bird District including Clearwater River, Greenwater Lake, Lac La Ronge, Meadow Lake, Narrow Hills, Wildcat Hill and Clarence-Steepbank Lakes provincial parks; Fort a la Corne and Horsehide Lake wildlife management units; and Bronson Forest and Round Lake recreation sites	Sept. 1 - Dec. 12	**Ducks:** 8 daily of which only three may be pintails **Coots and Snipe:** 10 each daily **Possession:** 2 times daily limit
South Game Bird District including Duck Mountain and Moose Mountain provincial parks; Valeport Wildlife Management Unit; and that portion of Douglas Provincial Park located west of Diefenbaker Lake (Qu'Appelle Arm) and starting Sept. 22, Last Mountain Lake National Wildlife Area	Sept. 7 -Dec. 12	

Geese and Sandhill Cranes - All Hunters

North Game Bird District (all geese and sandhill cranes) including Clearwater River, Wildcat Hill, Greenwater Lake, Lac La Ronge, Meadow Lake, Narrow Hills and Clarence-Steepbank Lakes provincial parks; Fort a la Corne and Horsehide Lake wildlife Management Units; and Bronson Forest and Round Lake recreation sites	Sept. 1 - Dec. 12	**Sandhill Cranes:** 5 Daily **Possession:** 2 times daily limit
South Game Bird District including Valeport Wildlife Management Unit; and that portion of Douglas Provincial Park located west of Diefenbaker Lake (Qu'Appelle Arm) and starting Sept. 21, Last Mountain Lake National Wildlife Area		**Separate Bag Limits** **Dark Geese (Canada and White-fronted Geese):** daily limit of 8 of which only 5 may be White-fronted Geese **Possession:** 2 times daily limit
All Hunters - Sandhill Cranes	Sept. 1 - Dec. 12	
Residents of Saskatchewan - all geese except White-fronted Geese	Sept. 1 - Dec. 12	**White Geese (Snow [blue] and Ross' Geese):** daily limit a combination of 10 geese **Possession:** 3 times daily limit
- White-fronted Geese	Sept. 7 - Dec. 12	
Canadian Residents and Non-residents of Canada - white geese	Sept. 1 - Dec. 12	
- dark geese	Sept. 21- Dec. 12	

Note: The Last Mountain Lake National Wildlife Area is closed to all sandhill crane hunting.

Before October 19, hunting for all geese is restricted to morning only (one-half hour before sunrise to 12:00 noon)in the South Game Bird District and WMZs 43, 47, 48 to 59 and 67 to 69 in the North Game Bird District. All day hunting for all geese begins October 19.

Exception: Beginning October 1 in WMZs 21 and 37 to 41, white geese (Snow [blue] and Ross') may be hunted all day.

Fish & Wildlife Deve

Activities Report 1997-98

The Fish & Wildlife Development Fund (FWDF) is supported by hunters, trappers and anglers through a portion of their licence fees and these moneys are used to secure and improve both fish and wildlife habitat throughout Saskatchewan. The following activities relate to the wildlife portion of the FWDF and include the projected expenditures from April 1, 1997 to March 31, 1998.

lopment Fund

Habitat Securement

56 per cent ($957,000)

In 1997-98, the FWDF secured a total of 4,259 hectares (10,525 acres) of important wildlife habitat for a total of 70,147 hectares (173,331 acres) to date. This total includes 5,320 hectares (13,148 acres) of joint habitat purchases with the Saskatchewan Wildlife Federation (SWF), the Nature Conservancy of Canada (NCC) and the Rocky Mountain Elk Foundation (RMEF). The FWDF also has an interest in 4,309 hectares (10,648 acres) of leased Crown land and 1,011 hectares (2,500 acres) of conservation easements on private lands.

Ecosystem Management

19 per cent ($326,500)

The portion of ecosystem management that relates specifically to habitat conservation is the Representative Areas Network (RAN). The RAN, to be established by the year 2000, will help conserve areas in Saskatchewan that are ecologically important or distinctive. The RAN incorporates all of the unique features, landscapes and resources already being managed as parks, ecological reserves and wildlife lands. New sites that supplement these existing areas are being identified and will be designated in consultation with landowners, and other interest groups.

Resource Education

11 per cent ($191,500)

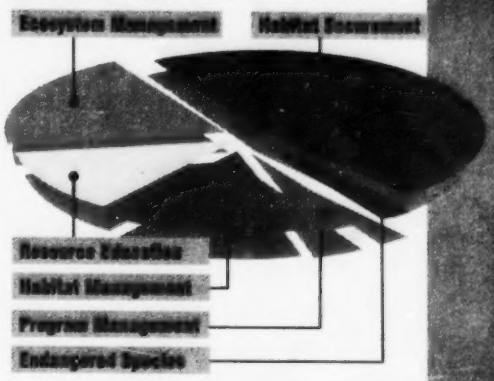
Resource education expenditures include agreements with the Saskatchewan Association for Firearm Education ($85,000), SaskTip ($7,500) and Becoming an Outdoors Woman ($500) as well as the maintenance of Project WILD.

Habitat Management

10 per cent ($174,700)

Habitat management expenditures include funding agreements with Saskatchewan Wetland Conservation Corporation ($50,000) and the SWF ($50,000). Other costs include seeding or improving 806 hectares (1,990 acres) of hayland and eight co-operative enhancement projects resulting in 70,000 trees planted and five kilometres of old fences removed.

Projected Expenditures
April 1, 1997 to March 31, 1998



Program Management

3 per cent ($53,000)

This area relates to the administrative support of the wildlife component of the FWDF.

Endangered Species

> 1 per cent ($6,000)

This program area involves an agreement with Nature Saskatchewan ($3,800) and the development of species sketches for educational and promotional purposes.

Saskatchewan Wildlife Lands Atlas

The Saskatchewan Wildlife Lands Atlas is a product of Saskatchewan Environment and Resource Management (SERM) and the Saskatchewan Wildlife Federation (SWF) and includes both FWDF Wildlife Lands and Habitat Trust lands. This atlas is available at a cost of $10, including GST, at SERM offices or through the SWF main office at Moose Jaw or numerous SWF branches throughout Saskatchewan. Proceeds from this atlas go toward wildlife habitat enhancement efforts throughout the province.

Complete list of New Wildlife Habitat Lands (since printing the 1997 Hunting & Trapping Guide)

Location	Owned	Acres
RM No 66 (Griffin)		
*NE¼ 10-09-12 W2	SWF	17
RM No. 157 (Qu'Appelle)		
NE¼ 08-19-16 W2	SWF	142
RM No. 181 (Langenburg)		
NE¼ 31-20-31 W1	WDF	160
SE¼ 31-20-31 W1	WDF	160
RM No. 183 (Stockholm)		
SW¼ 04-19A-03 W2	SWF	157
RM No. 247 (Leross)		
SW¼ 36-25-15 W2	WDF	160
RM No. 275 (Insinger)		
NE¼ 18-30-07 W2	WDF	160
NW¼02-29-08 W2	WDF	157
NE¼ 35-29-08 W2	WDF	150
NW¼ 23-30-08 W2	WDF	160
NW¼ 25-30-08 W2	WDF	160
NE¼ 25-30-08 W2	WDF	160
SW¼ 25-30-08 W2	WDF	160
NW¼ 26-30-08 W2	WDF	160
NE¼ 26-30-08 W2	WDF	131
SE¼ 26-30-08 W2	WDF	121
SW¼ 26-30-08 W2	WDF	160
NW¼ 34-30-08 W2	WDF	162
NE¼ 34-30-08 W2	WDF	162
SW¼ 34-30-08 W2	WDF	160
SE¼ 34-30-08 W2	WDF	160
NW¼ 35-30-08 W2	WDF	160
SW¼ 35-30-08 W2	WDF	160
RM No. 303 (Canora)		
NE¼ 21-32-03 W2	SWF	160
SW¼ 27-32-03 W2	SWF	148
SE¼ 28-32-03 W2	SWF	160
RM No. 305 (Invermay)		
NW¼ 16-31-08 W2	WDF	160
SW¼ 16-31-08 W2	WDF	82
SE¼ 16-31-08 W2	WDF	80
NE¼ 17-31-08 W2	WDF	160
SE¼ 17-31-08 W2	WDF	83
SW¼ 17-31-08 W2	WDF	83
SW¼ 21-31-08 W2	WDF	160
RM No. 309 (Jansen)		
**SE¼ 25-32-19 W2	SWF	10
RM No. 335 (Okla)		
SE¼ 07-37-09 W2	WDF	151
SW¼ 08-37-09 W2	WDF	160
RM No. 368 (Spalding)		
SE¼ 21-39-17 W2	SWF	70
RM No. 377 (Biggar)		
NW¼ 07-40-13 W3	WDF	160
RM No. 397 (Archerwill)		
SW¼ 25-42-14 W2	WDF	159
RM No. 494 (Canwood)		
SE¼ 03-50-5 W3	WDF	159

Note on Ownership: * Denotes CN Property ** Denotes Donated Property

Protect yourself - protect

Firearm Safety/Hunter Education

Passing on the Tradition!

Hunting and trapping tradition has been passed down to us by concerned and responsible participants who want to share this unique outdoor experience. We need to ensure that these activities continue to provide safe and enjoyable outdoor experiences for future generations. A key component in passing on this tradition is to introduce young people to Saskatchewan's Firearm Safety/Hunter Education Program. This program provides instruction in the safe use of firearms, conservation principles, wildlife identification and the important role hunting and trapping plays in wildlife conservation.

A Firearm Safety/Hunter Education certificate is required in Saskatchewan for all first-time hunters, people under 18 years of age who wish to hunt and first-time trappers. Experienced hunters and trappers may also find the course useful. By encouraging new enrollment in the program, you will be taking a positive step toward ensuring that all hunters and trappers have a sound knowledge of responsible gun handling and basic wildlife management principles.

For further information on the Firearm Safety/Hunter Education Program, contact:

Saskatchewan Association for Firearm Education (SAFE), 1766 McAra Street, Regina, SK, S4N 6L4, or phone (306) 352-6730

or:

SERM Fish and Wildlife Branch, 3211 Albert Street, Regina, SK, S4S 5W6, or phone (306) 787-2314.

International Bowhunter Education Program

This program provides training in the fundamentals of safe, responsible bowhunting to enhance the sport. The International Bowhunter Education Program is a 10 hour course of both classroom and field instruction.

Upon completion of the course, students receive a certificate issued by the Saskatchewan Association for Firearm Education.

For more information or to register for a class contact:

Mr. Rick Wyatt, NBEF Chairman, 1766 McAra Street, Regina, SK, S4N 6L4, or phone (306) 352-6730.

Becoming an Outdoors-Woman (BOW)

BOW 1998 will be held on June 5-7 at the Regina Wildlife Federation. BOW is an outdoors skills workshop for women where women learn the "how" of outdoor skills - how to fish, shoot a bow, shotgun or rifle, prepare for a backpacking trip, take outdoor photos, wildlife and plants, canoe or use a map and compass. All 27 courses, aimed at novices, emphasize "hands-on" so women not only learn the theory, but practice their learned skills as well. Any woman who wants to learn outdoors skills will find a combination of four courses that suits her interests.

Youth Hunter Skills Challenge Saskatchewan (YHSCS)

The YHSCS 1998 will be held at CFB Dundurn. This four day event is a hunting skills competition for youth between the ages of 12 and 18 who have completed their Saskatchewan Hunter Education course.

Youth compete in four hunter responsibility events - Hunter Responsibility Exam, Hunter Safety Trail Challenge, Hunting Orienteering Skills Challenge and the Hunting Wildlife Identification Challenge. In addition there are four Challenge shooting events - Hunting Archery, Hunting Muzzleloading, Hunting Shotgun and Light Hunting Rifle. All events

are set up to mimic real hunting situations with life-sized game targets.

The top team of five individuals will be eligible to represent Saskatchewan at the International Youth Hunter Education Challenge in New Mexico, United States in 1999.

Saskatchewan Outdoor Skills Training and Awareness Program (SOSTAP)

SOSTAP is an outdoor skills certification program offering people the opportunity to learn outdoor skills through accredited courses. SOSTAP members will receive a certificate for their outdoor skills accomplishments and receive a quarterly newsletter with notifications of upcoming events and courses as well as articles on outdoor skills how-to, conservation and wildlife.

Participants receive credit for each completed course and exam and are certified at one of nine SOSTAP certification levels. The first level is Entrance and the highest level is Mentor. There are prerequisite courses as well as a minimum number of credit hours and practical field experience required to complete each SOSTAP level. A SOSTAP Mentor is an accomplished outdoors-person with all the skills required to safely lead beginners in outdoor activities.

For more information on the above programs, contact the Saskatchewan Association for Firearm Safety Education (SAFE) at:

Telephone: Tina Portman, SAFE Outreach Program Coordinator In Saskatoon 306-373-9632, Fax 306-373-4983
Mailing Address: SAFE, 1766 McAra Street, Regina, SK S4N 6L4
E-mail: safee@sk.sympatico.ca
Web-site: www3.sk.sympatico.ca/safee.

your environment

Wildlife Co-operator Awards

The Wildlife Co-operator Awards are an incentive program to reward hunters for donating biological samples from their game species and providing harvest information. This information is used in setting hunting seasons and licence quotas. Last year, hunters provided over 500 upland bird wings and 3,000 big game jaw and tooth samples for analysis. The department values the contributions of all hunters and the assistance of checkpoint operators who collect this information.

1998 Major Awards Draw

Six hunter organizations, and SERM are donating major awards for this year's Wildlife Co-operator Awards program. Moose, elk, white-tailed deer and bear hunters, whether they bag an animal or not, may fill out an entry form at any checkpoint or SERM office. Upland bird hunters who submit a sample need only fill in their name and address in the space provided on a wing collection envelope. Entries must be received by December 31, 1998. SERM employees are not eligible for these awards. Participating organizations include:

- Saskatchewan Wildlife Federation.
- The South Saskatchewan Wildlife Association.
- The Saskatchewan Bowhunters Association.
- Saskatchewan Blackpowder Association.
- Rocky Mountain Elk Foundation.
- SERM.

Samples Required For 1998

- **Moose** - all WMZs: two bottom incisor teeth, antler description, animal sex and age.
- **Elk** - all WMZs: two bottom incisor teeth, antler description, animal sex and age.
- **Bear** - all WMZs: two premolar teeth, pelt color, animal sex and age.
- **White-tailed deer** - WMZs 56 to 76: lower jaw or two bottom incisor teeth, antler description, animal sex and age.
- **Hungarian Partridge** - all WMZs: one wing.
- **Sharp-tailed Grouse** - all WMZs: one wing and two central tail feathers.

Big Game

All hunters who provide biological samples will be mailed a limited edition lapel pin. Samples can be dropped off at any SERM office or the following checkpoints:

- Carrot River - Sunset Service (10 kilometres north of Carrot River)
- Dore Lake Lodge
- Glaslyn - Moose Country Service (16 kilometres north on Highway No. 4)
- Green Lake - B. McKay Enterprises
- Greenwater Lake Provincial Park - Fisherman's Cove
- Hanson Lake Road - Caribou Creek Lodge
- Hudson Bay/Little Swan Road - Pee Paw Outfitters (22.5 kilometres south of Hudson Bay)
- Little Fishing Lake - Christies' Store
- McBride Lake - Lamplighter Lodge
- Pelly - L & Y Service
- Tisdale - Jubilee Service (Highways No. 35 and 3)
- Usherville - Usherville Corner Service

Upland Game Birds

Sharp-tailed grouse and Hungarian partridge wings are needed urgently from all areas to assess reproduction. Sharp-tailed grouse hunters should remove one wing and two central tail feathers from the bird and place them in the sample envelope. Hungarian partridge hunters need only submit a complete wing from each bird. Please do not place samples in plastic bags. Complete the WMZ and harvest information in the space provided on the envelope.

Hunters may pick up wing envelopes and drop off their samples at any SERM office. Please print your name, address and phone number on each envelope you submit. Every upland bird hunter submitting a usable sample is eligible for the awards draw and will receive a limited edition lapel pin by mail.

Hunter Questionnaire Survey

Each December, SERM sends out a questionnaire survey to about 25,000 hunters. The information provided assists wildlife managers to establish season dates, quotas and bag limits for game species each year. The information also helps to ensure our populations remain healthy and in turn provides Saskatchewan hunters with quality hunting opportunities. If you receive a questionnaire, please take time to complete and return it to SERM.

Canadian Cooperative Wildlife Health Centre

The Canadian Cooperative Wildlife Health Centre (CCWHC) is a joint project among Canada's four veterinary colleges, Environment Canada, the governments of all provinces and territories, the Max Bell Foundation and the Canadian Wildlife Federation. The objective of the CCWHC is to assist wildlife managers in dealing with health problems in wildlife by investigating and diagnosing disease problems; preparing and maintaining a national computerized database of wildlife health information; assisting and advising government agencies on matters related to wildlife health; and disseminating information about wildlife health.

Hunt for Hunger

The SWF and the Food Bank are asking hunters to contribute surplus game meat to the Food Bank for distribution to needy people. Meat, an important part of a healthy diet, is difficult for charities to obtain.

In an effort to help hunters donate meat, the Food Bank is setting up an extensive network of approved drop-off locations throughout the province. For more information, contact any SWF branch executive member, or call the Food Bank toll free (in Saskatchewan only) at 1-800-567-8008.

Don't Give a Killer a Free Ride.

Dutch Elm Disease is spreading rapidly through the province. Do not cut, transport, buy or sell elm firewood. Dutch Elm Disease is deadly.

For more information on identifying and destroying elm firewood, contact your nearest conservation officer or call

1-800-SASKELM (1-800-727-5356)

Status Indian and Métis Hunting in Saskatchewan

The following information is designed to promote a better understanding of how Saskatchewan wildlife laws apply to Aboriginal (Status Indians and Métis) people. As a result of a Court of Queen's Bench decision in June 1996, Métis were given the same rights to hunt as Status Indians. This decision was appealed by the province on June 19, 1997. Unless ruled differently by the Court of Appeal, the province considers Métis people to have the same hunting and fishing rights as Status Indians.

Examples of a few of the wildlife and fishing laws which affect Aboriginal people are:

- In order to hunt under Status Indian entitlement, proof of Indian status, as defined under the Indian Act (federally issued **Certificate of Indian Status**), must be carried. If no identification is carried, equipment may be seized until proof of status is obtained.
- It is the responsibility of Métis hunters to provide adequate proof of Metis status. A Métis Nation of Saskatchewan (MNS) membership card may be accepted as proof of Métis status but if the validity of the card is questioned, further proof may be requested.
- Aboriginal people may hunt for food, in a safe manner, at any time of the year, without a licence, on lands to which they have right of access.
- Hunting on private property by Aboriginal people is allowed only with permission and it is recommended that written permission of the landowner be obtained.

Birds of Prey for Ceremonial Use

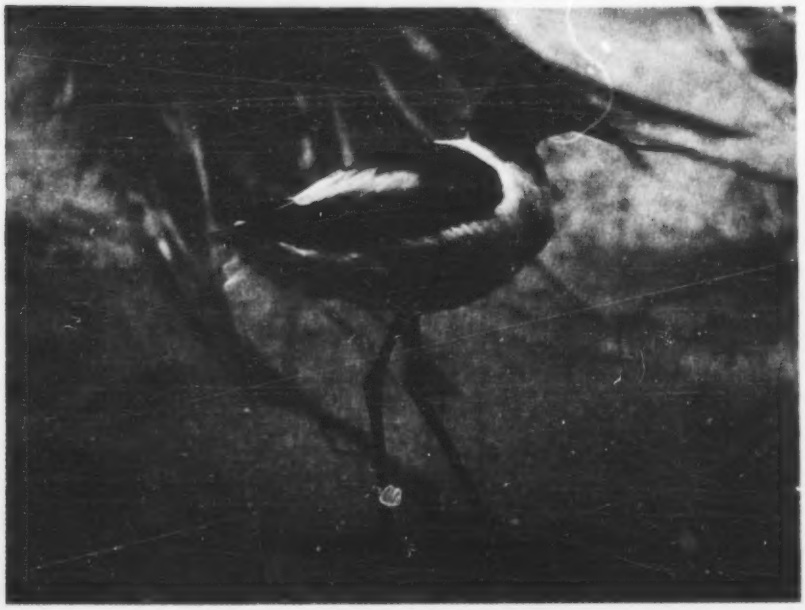
Saskatchewan Environment and Resource Management (SERM) recognizes the value of birds of prey (eagles) for traditional spiritual ceremonies.

Eagles collected by SERM are available for use by First Nations people for ceremonial purposes. Applications, available at any SERM office, are reviewed by the Saskatchewan Indian Cultural Centre and the Traditional Council of Elders, who decide on how the eagle feathers are to be distributed.

This applies only to eagles collected by SERM. Anyone who illegally kills birds of prey will be subject to prosecution.

- It is illegal for anyone, including Aboriginal people, to:
  - hunt at night anywhere in the province with spotlights, jack lights, vehicle headlights or any artificial lights, night vision goggles or scopes;
  - discharge a firearm at night from roads, road allowances and ditches. A road is defined as any prepared surface designed for vehicle traffic including highways, grid and farm access roads, forest and park roads and oil service roads;
  - discharge a firearm in a careless manner or in such a way as to endanger people or property; and
  - shoot within ½ kilometre (500 yards) of an occupied dwelling or corals containing livestock without the landowner's permission.
- Game preserves, road corridor game preserves, wildlife refuges and other closed areas are designed to protect wildlife. Hunting by anyone, including Aboriginal people, is prohibited in these areas.
- The safety regulations contained in *The Wildlife Act* and regulations apply to all hunters, including Aboriginal people.

For more information on these or any other regulation contact your local conservation officer.



The Saskatchewan Wetland Conservation Corporation (SWCC)

SWCC works closely with rural landowners and farm based organizations to integrate land management techniques which benefit wildlife into farming operations.

The Prairie Shores Program benefits threatened and endangered species, shorebirds and grassland songbirds. In the Missouri Coteau, approximately 2,753 hectares (6,800 acres) of marginal cropland were converted to pasture and 1,619 hectares (4,000 acres) of native prairie shorebird habitat secured to support the Western Hemisphere Shorebird Reserve Network (WHSRN) site at Chaplin, Saskatchewan.

At the Quill Lakes an additional 672 hectares (2,400 acres) of prime habitat were secured. Eight miles of fencing was constructed and a water site was developed to set up a pasture rotation at Elfros. This was done in cooperation with Ducks Unlimited.

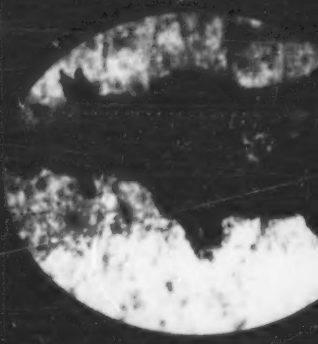
Only 17 per cent of Saskatchewan's original native prairie remains. The Native Prairie Stewardship Program is designated to encourage landowners, on a voluntary basis, to conserve the native prairie parcels they own or manage. To date, 138 voluntary stewardship agreements have been made on over 11,336 hectares (28,000 acres) of native prairie.

To help landowners protect and manage their native prairie lands, SWCC produced a self-directed guide, "Managing Your Native Prairie Parcels." It contains basic information about native prairie ecosystems, conservation management options, profiles of Saskatchewan landowners and step-by-step instructions on developing management plans on individual sites.

This is the second year for the Streambank Stewardship Program which encourages landowners to conserve the riparian areas they own or manage. Pilot projects are underway to improve the condition of a number of streams across Saskatchewan. A management guide was produced to assist landowners to [illegible].

For further information on these programs, please contact:

Saskatchewan Wetland
Conservation Corporation
#202 - 2050 Cornwall Street
Regina, SK S4P 2K5
Telephone: 306-787-0726
email: swccnet@wetland.sk.ca
website: www.wetland.sk.ca



Quick Fact

Status of key moose populatio
The following table summarize
status of moose populations w
surveyed in 1998. Population
previous year's surveys are in
comparison (moose per squa

Cumberland House

1998 (.26/km)
1995 (.28/km)
1987 (.76/km)
1984 (.73/km)

Divide Forest

1998 (.40/km)
1997 (.27/km)
1995 (.51/km)
1990 (.69/km)
1984 (.40/km)

Duck Mountain Park

1998 (.62/km)
1987 (.79/km)
1983 (.49/km)

Moose Mountain Par

1998 (.40/km)
1992 (.34/km)
1991 (.31/km)
1990 (.33/km)
1989 (.40/km)

Porcupine Forest

1998 (.65/km)
1997 (.85/km)
1996 (.78/km)
1992 (.75/km)
1989 (1.0/km)

Good Call!

Phone 1-800-667-7561 to report hunting and fishing violations.

You can help ensure that we all continue to enjoy our province's wildlife and fisheries resources for years to come.

Call the TIP line or your local conservation officer to report:

- *trafficking in wildlife*
- *wasting game*
- *hunting in closed seasons*
- *hunting at night with lights*
- *any illegal or unsafe hunting practices*

TURN IN POACHERS

TIP

1-800-667-7561

24 HOURS · TOLL FREE

Every call is investigated.

Saskatchewan Environment and Resource Management Offices

To report hunting violations, or to obtain assistance when planning your hunting trip, contact your local conservation officer at the appropriate SERM office listed below. Our ecoregion area biologists are also at your service. The area code for all offices is (306).

Refer to the centrefold Zone map for locations.

SERM Offices

Assiniboia	642-7242
Beauval	288-4710
Biggar	948-3588
Big River	469-2520
Blaine Lake	497-2553
Buffalo Narrows	235-1740
Carnduff	482-3509
Christopher Lake	982-2002
Creighton	688-8812
Cumberland House	888-2077
Dorintosh	236-7680
Estevan	637-4600
Fort Qu'Appelle	332-3215
Green Lake	832-2255
Hudson Bay	865-2274
Humboldt	682-6726
Ile a la Crosse	833-2500
Kindersley	463-5458
La Loche	822-1700
La Ronge	425-4234
Leader	628-3100
Lloydminster	825-6430
Loon Lake	837-2092
Lower Fishing Lakes	426-2622
Maple Creek	662-5434
Meadow Lake	236-7557
Melfort	752-6214
Melville	728-7480
Moose Jaw	694-3659
Moosomin	435-4545
Nipawin	862-1790
North Battleford	446-7416
Outlook	867-5560
Pelican Narrows	632-5510
Pierceland	839-2002
Pinehouse	884-2060
Preeceville	547-2936
Prince Albert	953-2322
Regina	787-2080
Saskatoon	933-6240
Shaunavon	297-5433
Smeaton	426-2611
Southend Reindeer	758-2177
Spiritwood	883-2306
Stony Rapids	439-2062
Swift Current	778-8205
Wadena	338-2452
Watrous	946-3233
Weyburn	848-2344
Wollaston Lake	633-2112
Yorkton	786-1463

EcoRegion Area Biologists

La Ronge	425-4237
Meadow Lake	236-7545
Prince Albert	953-2695
Melville	728-7487
Swift Current	778-8218

Provincial Parks

Athabasca Sand Dunes	439-2062
The Battlefords	386-2212
Blackstrap	492-2276
Buffalo Pound	694-3659
Candle Lake	929-8400
Clarence-Steepbank Lakes	426-2622
Clearwater River	235-1740
Crooked Lake	728-7480
Cypress Hills	662-4411
Danielson	857-2155
Douglas	854-2177
Duck Mountain	542-5500
Echo Valley	332-3215
Good Spirit Lake	792-4750
Greenwater Lake	278-2972
Katepwa Point	332-3215
Lac la Ronge	425-4234
Makwa Lake	837-2092
Meadow Lake (Dorintosh)	236-7680
(Pierceland)	839-2002
Moose Mountain	577-2600
Narrow Hills	426-2611
Pike Lake	933-7971
Rowan's Ravine	725-5200
Saskatchewan Landing	375-5525
Wildcat Hill	865-2274

Services to Hunters

Hearing/Speech Impaired (TDD) Line	306-787-6145
Saskatchewan Outfitters Association	306-763-5434
SaskGeomatics	306-787-4880
Tourism Saskatchewan - Regina area	306-787-2300
- Toll Free North America	1-800-667-7191

Saskatchewan Environment and Resource Management

Hon. Lorne Scott, Minister

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